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Participation and dropout in organised youth sport: The role of implicit beliefs and key social figures

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PARTICIPATION AND DROPOUT IN ORGANISED YOUTH SPORT: THE ROLE OF IMPLICIT BELIEFS AND KEY SOCIAL FIGURES

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Certification

I, Lauren Gardner, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Psychology, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Lauren A. Gardner

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Abstract

Although the benefits of sport participation are well established, the dropout rate in youth sport remains high. This is problematic given dropout from youth sport has been associated with significant negative health and developmental implications, the effects of which can last into adulthood. This thesis aimed to propose a conceptual framework that can be applied to the youth sport context to understand participation/dropout behaviour. Chapter 2 provided a theoretical foundation for the research program. After reviewing the existing literature surrounding youth sport participation/dropout, the social-cognitive model of achievement motivation, and key social figures in youth sport, an integrated theoretical model was proposed. It was argued that implicit beliefs about ability, achievement goals, and relationships with parents, coaches, and peers would be associated with participation and dropout behaviour. The proposed model provided a framework which guided the following empirical chapters.

Chapter 3 aimed to provide support for the use of enjoyment and behavioural intentions as proxy measures of participation/dropout behaviour throughout the research program. Of the 327 regular sport participants at baseline, 247 (75.5%) continued participating in their main sport and 26 (8%) dropped out. Fifty-four (16.5%) participants could not be matched due to study attrition. A hierarchical logistic regression model estimated the probability of dropout. Step 1 included a number of covariates and indicated that age, parental support, coach-athlete relationship quality, and peer acceptance were significantly associated with dropout. In step 2, enjoyment and behavioural intentions to continue were included. Step 2 explained further variance in dropout, with both enjoyment and behavioural intentions to continue inversely associated with dropout. Peer acceptance was the

only covariate to remain significantly associated with dropout in Step 2. Findings therefore support the use of enjoyment and behavioural intentions as indicators of sport participation/dropout behaviour.

Chapter 4 focused on the cognitive components of the model by testing the proposed links between implicit beliefs, achievement goals, and proxy measures of dropout including enjoyment and behavioural intentions to continue. Multiple mediation path models using 327 regular sport participants aged between 11 and 15 years indicated that implicit beliefs were indirectly linked with enjoyment/intention to continue through achievement goals. Specifically, individuals high in incremental beliefs reported greater enjoyment and intention to continue, perhaps due to endorsing mastery-approach goals. Conversely, individuals relatively high in entity beliefs reported less enjoyment, which was perhaps due to endorsing performance-avoidance goals. These individuals also reported less intention to continue, regardless of their achievement goals. Results provided support for the cognitive components of the proposed theoretical model.

Chapter 5 focused on the social components of the proposed model by examining the links between perceptions of relationships with parents, coaches, and peers and enjoyment/intention to continue. A latent profile analysis using the same participants from Chapter 3 (n = 313 following the removal of outliers) revealed four distinct social climate profiles: positive social climate (45.1%); diminished social climate (19.8%); positive coach relationship quality (19.8%); and, positive friendship quality (15.3%). The greatest levels of enjoyment and intention to continue were reported by individuals within the positive social climate and the positive coach relationship profiles, as compared to the diminished social climate and positive friendship quality profiles. Additional mediation analyses revealed that the social

climate profiles were linked with intention to continue indirectly through enjoyment. Findings highlighted the key role of social figures in youth sport and suggested the coach may be particularly important.

Finally, chapter 6 tested the overall theoretical model proposed in chapter 2. Specifically, the study explored whether implicit beliefs and achievement goals were related to enjoyment over a one-year period, and whether perceived changes in the coach-athlete relationship moderated these relationships. Indirect and conditional indirect effect analyses were conducted using 247 regular sport participants (M_{age}=13.03 years). After adjusting for enjoyment at Time 1, incremental beliefs were indirectly related to Time 2 enjoyment via mastery-approach goals. However, this effect was only evident when the quality of the coach-athlete relationship was perceived to have deteriorated. Although the effect of the coach was not in the expected direction, results highlighted the protective value of adaptive implicit beliefs and achievement goals over time.

Overall, the findings from this thesis demonstrated the adaptive role of incremental beliefs and mastery-approach goals in the youth sport context, along with the importance of considering key social figures in youth sport research. This suggests that a purely cognitive motivational model is incomplete, and social factors should be integrated within the social-cognitive model of achievement motivation to gain a better understanding of participation and dropout behaviour in youth sport.

Thesis Style

This thesis has been prepared in journal article compilation style format. A signed thesis style format agreement between the PhD candidate and principle supervisor can be found in Appendix A.

Publications from the Thesis

Chapter 2

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Chapter 3

Gardner, L. A., Magee, C. A., & Vella, S. A. (in press). Enjoyment and behavioral intention predict organized youth sport participation and dropout. *Journal of Physical Activity and Health.*

Chapter 4

Gardner, L. A., Vella, S. A., & Magee, C. A. (2017). Continued participation in youth sports: The role of achievement motivation. *Journal of Applied Sport Psychology, 29*, 17-31.

Chapter 5

Gardner, L. A., Magee, C. A., & Vella, S. A. (2016). Social climate profiles in adolescent sports: Associations with enjoyment and intention to continue. *Journal of Adolescence, 52*, 112-123.

Chapter 6

Gardner, L. A., Vella, S. A., & Magee, C. A. (2017). The role of implicit beliefs and achievement goals as protective factors in youth sport. *Journal of Applied Sport Psychology,* 1-13. Advance online publication.

Components of this thesis have also been presented at:

i) The North American Society for the Psychology of Sport and Physical Activity Conference, 2016, Montreal, Canada.

In all cases of work that has been published, presented, and submitted for publication, the greater part of the work is directly attributable to me, as a Ph.D. candidate. Supervisors have enacted their role in the formulation of research ideas and in editing manuscripts. All investigations, analyses, and reporting have been carried out solely by me, in keeping with the requirements of my candidature. A signed statement of contribution can be found in Appendix B.

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Chapter 1: General Introduction and Aims

1.1 Introduction

Organised sport refers to sporting activities that are coordinated by a club or association and directed by the rules and regulations of a governing body (Australian Bureau of Statistics, 2008). Organised youth sport refers to that which involves participants up to the age of 18, and typically consists of participation in training and competitive fixtures under the supervision of a coach (Smoll & Smith, 2002). In Australia, organised sport is the main avenue for youth aged five years and above to be physically active (Active Healthy Kids Australia, 2016; Australian Sports Commission, 2016). National data from 2015-2016 indicates that participation in organised sport is highest among young people aged 9-11 years with 64% of children participating in this age bracket, followed by 60% in the 12-14 year age bracket and 53% in the 15-17 year age bracket (Australian Sports Commission, 2016).

The benefits of youth sport participation are numerous and encompass multiple domains. For example, in the physical health domain, sport participation is associated with a reduced incidence of obesity and related problems including diabetes, high blood pressure, and cardiovascular disease (Australian Institute of Health and Welfare, 2012; Merkel, 2013). Psychosocial health benefits may include improved personal and social skills, greater self-esteem, and a reduction in the symptoms of mental health problems such as anxiety and depression (Eime, Young, Harvey, Charity, & Payne, 2013). Sport is also an important contributor to Australia's economy, generating over $12.8 billion in annual income (Australian Bureau of Statistics, 2013).

Despite Australia having one of the highest rates of youth sport participation worldwide, rates fall during adolescence and continue to decline with age (Australian Sports Commission, 2016; Tremblay et al., 2014). Although statistics can vary, recent Australian and international research estimates that dropout can be as high as 30% per year (Australian Sports Commission, 2016; Balish, McLaren, Rainham, & Blanchard, 2014; Vella, Cliff, & Okely, 2014). With over 2.5 million Australian children (0-14 years) currently participating regularly in organised sport, this means as many as 750,000 will drop out each year (Australian Sports Commission, 2016). This is a concerning trend given the short- and long-term benefits derived from youth sport participation (Eime et al., 2013; Janssen & Leblanc, 2010). This thesis therefore aims to explore the factors underlying youth sport participation and dropout. An integrated motivational model based on the social-cognitive model of achievement motivation is proposed and utilised to guide the empirical research. Enjoyment and behavioural intentions are used as indicators of participation/dropout behaviour within the research. The thesis will firstly apply the model cross-sectionally to individually explore the cognitive and social components in relation to enjoyment and behavioural intentions. The overall theoretical model is then tested by exploring the interaction between both cognitive and social factors over a one-year period.

1.2 Why Youth Participate in Sport

Within Australia, organised sport is typically available for children from the age of 5 with the most popular sports being soccer, Australian football (AFL), netball, basketball, and cricket (Australian Sports Commission, 2016). Common reasons for participation include fun and enjoyment, the opportunity to learn new skills and develop competence, following in older family members' footsteps, and

the chance to interact with others and make new friends (Bailey, Cope, & Pearce, 2013). Additionally, given the increasing rates of overweight and obesity among Australian children, sport participation is considered a viable and engaging method to increase physical activity levels and aid the development of fundamental movement skills (Active Healthy Kids Australia, 2014; Bailey, Cope, et al., 2013). However, reasons surrounding physical health are likely to be a greater motive for parents to encourage sport participation, whereas fun and enjoyment are considered the primary motives for youth sport participants (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993; Visek et al., 2015).

1.3 Why Youth Drop out of Sport

Despite the numerous reasons for participating in youth sport, research has increasingly focused on understanding why participation rates decline so dramatically during adolescence. Recent reviews (Balish et al., 2014; Crane & Temple, 2015) have highlighted the multilevel nature of factors associated with dropout. For example, at the intrapersonal level, common reasons for dropout include a lack of enjoyment, low perceptions of competence, amotivation, and stress (Balish et al., 2014; Crane & Temple, 2015). Interpersonal factors may include perceptions of pressure and negative perceptions of relationships with parents, coaches, and peers, along with having other priorities (Balish et al., 2014; Crane & Temple, 2015). There are also structural factors that may contribute to dropout such as the costs associated with the sport (e.g., registration fees, travel costs), time constraints (e.g., travel time, length of training, and competing demands such as work or study), and organisational issues (e.g., lack of facilities or poor club structure) (Balish et al., 2014; Crane & Temple, 2015).

There are significant negative implications associated with youth sport dropout. For example, Vella, Cliff, Magee, and Okely (2014) found that individuals who dropped out of sport had reduced health-related quality of life compared to individuals who maintained participation. Subsequent research indicated that individuals who dropped out of sport also had higher rates of psychological difficulties and greater internalising problems (e.g., depression and anxiety) than those who continued participating (Vella, Cliff, Magee, & Okely, 2015). Additionally, it is estimated that preventing dropout from organised sport would save the economy $1.49 billion in health care costs per year (Australian Sports Commission, 2009). These findings suggest that more research is needed to better understand and prevent further drop out from youth sport.

1.4 Theoretical Framework to Explore Dropout

This thesis utilises Dweck and Leggett's (1988) social-cognitive model of achievement motivation (SCMAM) as a theoretical framework to examine the factors contributing to youth sport dropout. The SCMAM centres on the role of two implicit beliefs and two achievement goals as predictors of cognitive, affective, and behavioural responses within achievement settings. Individuals who endorse incremental beliefs regard ability as a malleable, controllable quality that can be developed, whereas individuals who endorse entity beliefs regard ability as a fixed, uncontrollable trait. Incremental beliefs are theorised to predict mastery goals which focus on the development of competence through mastering a skill. Entity beliefs are theorised to predict performance goals which focus on the demonstration of competence relative to others. Research in a range of achievement contexts (e.g., school and sport) has linked incremental beliefs and mastery goals with adaptive outcomes including intrinsic motivation, enjoyment, and persistence at challenging

tasks (Biddle, Wang, Chatzisarantis, & Spray, 2003; Dweck & Leggett, 1988; Kasimatis, Miller, & Marcussen, 1996). In contrast, entity beliefs and performance goals have been linked with more maladaptive outcomes such as decreased motivation and reduced persistence at tasks (Biddle, Wang, Chatzisarantis, et al., 2003; Dweck & Leggett, 1988). However, it is theorised that perceived competence moderates the influence of entity beliefs and performance goals, with the negative effects only evident when perceptions of competence are low (Dweck & Leggett, 1988). The SCMAM (Dweck & Leggett, 1988) is illustrated below in Figure 1.1.

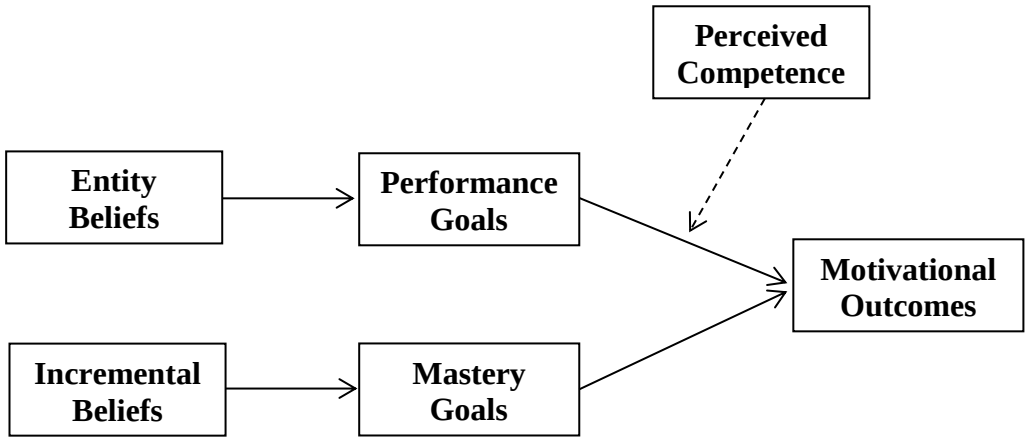

Figure 1.1. The social-cognitive model of achievement motivation

Despite the SCMAM gaining a considerable amount of support across domains, Cury, Elliot, Da Fonseca, and Moller (2006) highlighted some inconsistencies among research findings regarding the two achievement goals. For example, along with the established negative associated outcomes, performance goals have also led to positive outcomes including intrinsic motivation (Elliot, 1997). In contrast, mastery goals have failed to predict some positive outcomes including performance attainment (Urdan, 1997). Additionally, Cury et al. (2006) noted the

mixed support regarding the moderating role of perceived competence in the model. A number of revisions to the SCMAM were therefore recommended (Cury et al., 2006). Firstly, it was proposed the more precise 2x2 achievement goal framework replace the dichotomous achievement goals to improve their predictive utility. The 2x2 framework adds a valence dimension (approach-avoidance distinction) to the original mastery-performance distinction. The four resulting achievement goals include mastery-approach goals, mastery-avoidance goals, performance-approach goals, and performance-avoidance goals (Elliot & McGregor, 2001). Cury et al.'s (2006) revised model also places perceived competence as an independent antecedent of achievement goals, rather than a moderating variable. The r-SCMAM (Cury et al., 2006) is illustrated below in Figure 1.2.

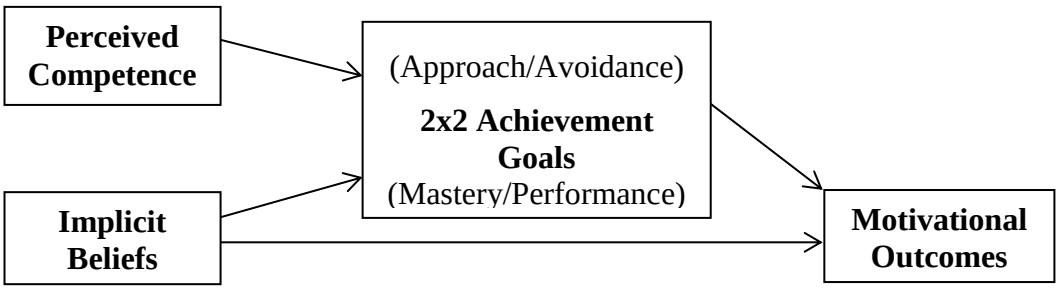

Figure 1.2. The revised social-cognitive model of achievement motivation

Although Dweck and Leggett's (1988) original model and Cury et al.'s (2006) revised model are motivational theories based in the social-cognitive domain, the models focus on the cognitive antecedents of behaviour with little acknowledgement of the role of social factors. As outlined in Bandura's (1986) social cognitive theory, there is a reciprocal relationship between behaviour, cognitions, and environmental influences. Thus a motivational model, such as the

SCMAM, that does not take social factors into account provides only a partial explanation of the motivating factors underlying one's behaviour. Social factors are particularly important in the context of youth sport given the role of key social relationships (Fraser-Thomas, Côté, & Deakin, 2005). For example, parents are critical to youth sport participation as they are responsible for finding a sports club, providing finance for registration and sports gear/equipment, organising transportation to and from trainings and games, as well as being a source of socio-emotional support (Côté, 1999; Côte & Hay, 2002). Coaches can also be a source of socio-emotional support in addition to providing technical instruction to aid the development of skills (Keegan, Spray, Harwood, & Lavallee, 2010). However, poor relationships and conflict between coaches and athletes commonly contribute to dropout (Armentrout & Kamphoff, 2011; Crane & Temple, 2015; Rottensteiner, Konttinen, & Laakso, 2015). Peers are another prominent social figure in youth sport with their influence most significant during adolescence (Ullrich-French & Smith, 2006). Although making and playing with friends can be a strong motivator for participation, negative peer relationships have been associated with dropout (Bailey, Cope, et al., 2013; Rottensteiner, Laakso, Pihlaja, & Konttinen, 2013). These findings highlight the value of investigating social factors in youth sport research. Therefore, incorporating social factors within the SCMAM may improve the predictive utility of the model and allow us to gain a more holistic understanding of the motivational factors contributing to dropout.

1.5 Challenges of Dropout Research

The issue of youth sport dropout has been recognised and researched for a number of decades (Gould, 1987); however there are substantial methodological challenges within the field. For example, to observe dropout behaviour, longitudinal

designs with large samples are required. Furthermore, to differentiate between individuals who drop out of one team to play for another team within the same sport, drop out of one sport to play another sport, or drop out of sport completely, these individuals must be able to be tracked across clubs and sports. Given these practical constraints, dropout research has commonly been conducted retrospectively (Butcher, Lindner, & Johns, 2002; Crane & Temple, 2015). For example, Fraser-Thomas, Côté, and Deakin (2008) conducted retrospective interviews with adolescent swimmers to understand how various physical and psychosocial factors interact to influence the decision to continue participating or dropout. This longitudinal analysis revealed that factors such as early specialisation, being the youngest in the training group, less one-on-one coaching throughout development, having a parent who was a high-level athlete in their youth, and not having a best friend at swimming were associated with dropout. However, limitations of retrospective research include reduced accuracy of responses, recall bias, and only a partial indication of causation (Morrow, 2010).

Other investigations have utilised proxy measures of dropout, such as enjoyment and behavioural intentions, to gain preliminary evidence about dropout behaviour (Atkins, Johnson, Force, & Petrie, 2015; Nache, Bar-Eli, Perrin, & Laurencelle, 2005). Enjoyment is often used as it has been identified as the most frequently cited factor related to the decision to drop out (Crane & Temple, 2015; Visek et al., 2015). Similarly, behavioural intentions have been utilised given the strong link between intent and behaviour, particularly in the domain of physical activity and sport (Ajzen, 1991; Ajzen & Driver, 1992; Kimiecik, 1992). However, few prospective studies have been conducted to test the predictive utility of these factors, with those that do exist limited by a focus on only one sport (Nache et al.,

2005; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002) or the inability to follow individuals and differentiate between team-specific dropout, sport-specific dropout, or complete dropout (Ullrich-French & Smith, 2009). A need therefore still remains to explore the relations between these factors and youth sport participation/dropout behaviour. Importantly, this should be done using a strong theoretical framework (Biddle, Hagger, Chatzisarantis, & Lippke, 2007).

1.6 The Current Research Program

This thesis consists of a program of research exploring participation and dropout in youth sport. Building on the SCMAM, an integrated motivational model is proposed to guide the empirical research. The utility of enjoyment and behavioural intentions as indicators of participation/dropout behaviour is explored. Two cross-sectional studies explore the cognitive and social components of the model in relation to enjoyment and behavioural intentions in youth sport. The thesis closes by testing the interaction between the cognitive and social components of the model over a one-year period. Specifically, the thesis has the following aims:

a) To propose a conceptual framework, based on the SCMAM, that can be applied to the youth sport context to understand participation/dropout behaviour;
b) To validate measures of enjoyment and behavioural intentions as indicators of participation and dropout behaviour;
c) To examine and the role of the cognitive components of the model in understanding youth sport participation/dropout;
d) To understand differences in the social climate in youth sport and highlight the importance of including social factors within the SCMAM;

e) To test the overall theoretical model by examining the interaction between cognitive and social factors over a one-year period.

In order to address these aims, five phases of research were necessary. These phases and the corresponding thesis chapters are outlined in Table 1.1 below.

Table 1.1

Overview of the Research Program

Aim	Phase	Chapter
a) To propose a conceptual framework that can be applied to the youth sport context to understand participation/dropout behaviour	*Phase 1.* Review of the existing literature and proposal of an adapted SCMAM to investigate the social and cognitive factors underlying youth sport dropout	*Chapter 2.* A Motivational Model to Understand Youth Sport Dropout and Enjoyment (Gardner, Vella, & Magee, 2016)
b) To validate measures of enjoyment and behavioural intentions as indicators of participation and dropout behaviour	*Phase 2.* Two-wave survey study examining dropout over a one-year period and the use of enjoyment and intentions as predictors of behaviour	*Chapter 3.* Enjoyment and Behavioural Intention Predict Participation and Dropout in Organized Youth Sport (Gardner, Magee, & Vella, 2017))
c) To examine the role of the cognitive components of the model in understanding youth sport participation/dropout	*Phase 3.* Cross-sectional survey study using a mediation approach to explore the role of implicit beliefs and achievement goals in relation to enjoyment and behavioural intentions	*Chapter 4.* Continued Participation in Youth Sports: The Role of Achievement Motivation (Gardner, Vella, & Magee, 2017)
d) To understand differences in the social climate in youth sport and highlight the importance of including social factors within the SCMAM	*Phase 4.* Cross-sectional survey study using a person-centred approach to examine the social climate in youth sport and its relation to enjoyment and behavioural intentions	*Chapter 5.* Social Climate Profiles in Adolescent Sports: Associations with Enjoyment and Intention to Continue (Gardner, Magee, & Vella, 2016)
e) To test the overall theoretical model by examining the interaction between cognitive and social factors over a one-year period	*Phase 5.* Two-wave survey study using indirect and conditional indirect effect analyses to investigate the interaction between cognitive and social factors over a one-year period and the implications on enjoyment	*Chapter 6.* The Role of Implicit Beliefs and Achievement Goals as Protective Factors in Youth Sport (Gardner, Vella, & Magee, 2017)

Chapter 2: A Motivational Model to Understand Youth Sport Dropout and Enjoyment

The following research has been published in the *International Journal of Sport Psychology*.

2.1 Introduction

Recent decades have seen an increasing interest in understanding the motivations behind participation and dropout behaviour in youth sport (Crane & Temple, 2015; Gould, 2007). Given the wide range of benefits associated with sport participation, gaining an understanding of reasons underlying participation and dropout in youth sport is particularly important. For example, in addition to the significant economic value and the numerous physical health benefits, sport participation during childhood and adolescence is associated with a range of positive psychosocial health outcomes including: improved social skills and support; greater self-efficacy; improved mental health; improved emotional regulation and resilience; and, higher self-esteem (Australian Sports Commission, 2009; Eime et al., 2013; Janssen & Leblanc, 2010). These findings demonstrate that sport participation can be a valuable facilitator of positive youth development (Eime et al., 2013; Fraser-Thomas et al., 2005). Importantly, these psychosocial health benefits exceed those attributable to participation in physical activity alone (Eime et al., 2013; Vella et al., 2015). Given that adolescence is a period often associated with high levels of stress and adversity, fostering developmental skills such as resilience and mental toughness through sport participation would be particularly beneficial for the this age group (Fraser-Thomas et al., 2005).

On average, participation in organized sport peaks between the ages of 9 and 11 years (Active Healthy Kids Australia, 2014). A recent investigation comparing

national report cards from 15 countries worldwide found that for most countries, about 50% of youth participated in organized sport regularly, with Australia and New Zealand reporting the highest participation rates of approximately two-thirds (Tremblay et al., 2014). However, sport participation rates decline rapidly, with attrition estimated to be around 30% per year during adolescence (Balish et al., 2014; Boiché & Sarrazin, 2009). Research shows that individuals who drop out from organized sport tend to experience a greater number of psychological difficulties and diminished health-related quality of life when compared to those who continue participation (Vella, Cliff, Magee, et al., 2014; Vella et al., 2015). Additionally, as sport programs evolve to foster positive youth development, a range of health and life skills can be fostered through participation which can lead to positive outcomes not only in youth but in later adult life (Fraser-Thomas et al., 2005). Therefore, given the broad benefits of sport participation, there is a need to understand factors underlying the high rates of dropout from organized sport.

2.2 Objectives

The objective of this article is to explore the utility of the revised social-cognitive model of achievement motivation (r-SCMAM; Cury et al., 2006; Dweck & Leggett, 1988) as a theoretical framework to examine and predict dropout in youth sport. In the current context, dropout is considered to occur when an individual stops participating or withdraws from an organized sport for a prolonged period. Dropout can be sport-specific (i.e., withdrawal from one sport whilst still participating in others) or sport-general (i.e., withdrawal from all sports) (Gould & Petlichkoff, 1988). As a secondary aim, this paper will incorporate social agents into the model to create an integrative motivational model. This is particularly important given the factors underlying dropout in youth sport are multilevel in nature (Balish et al., 2014;

Vella, Cliff, & Okely, 2014). This may enable researchers to gain a more thorough understanding of youth sport dropout, drive theory development, and provide a framework and testable hypotheses for empirical work.

Given the difficulties associated with dropout research (e.g., requires a longitudinal design) and the complexity of sport participation motivation itself, to address these aims the current article will briefly review prominent motivational factors associated with youth sport dropout, with a particular focus on enjoyment. Enjoyment has consistently been identified as a primary predictor of continued participation and dropout in youth sport and therefore may be a useful proxy measure in initial dropout research (Crane & Temple, 2015). The paper will then outline the social-cognitive model of achievement motivation (SCMAM; Dweck & Leggett, 1988) and explore the more recent revised social-cognitive model of achievement motivation (r-SCMAM; Cury et al., 2006; Dweck & Leggett, 1988) in relation to dropout and associated factors such as enjoyment. To address the secondary aim, the importance of integrating key social agents (including parents, peers, and coaches) in the r-SCMAM will be outlined. Finally, the implications for participation in youth sport and future research directions will be discussed.

2.3 Motivational Outcomes Associated with Dropout

A number of motivational outcomes associated with youth sport participation have been identified that are potential precursors of dropout. For example, a range of studies have found lack of motivation, or amotivation, to be highly correlated with dropout (Balish et al., 2014). Lack of perceived competence has also been consistently linked with the decision to dropout, and it is one of the most commonly researched factors in the dropout literature (Balish et al., 2014; Crane & Temple, 2015). Another factor often resulting in dropout is athlete burnout which is

characterized by physical and emotional exhaustion, a reduced sense of accomplishment, and sport devaluation (Raedeke, 1997). Additionally, intentions to continue or dropout of sport have been linked to actual dropout behaviour (Balish et al., 2014). However, according to a recent review of dropout from organized youth sport, lack of enjoyment is the single most frequently cited factor associated with the decision to drop out of sport (Crane & Temple, 2015).

2.4 Enjoyment

Enjoyment has long been identified as an important protective factor against dropout as it is a principal reason for continued participation in youth sport (Atkins, Johnson, Force, & Petrie, 2013; Gould, 2007; Scanlan & Simons, 1992). According to Scanlan and Simons (1992), enjoyment refers to "a positive affective response to sport experience that reflects generalized feelings such as pleasure, liking, and fun" (p. 202-203). Recent research by Visek et al. (2015) using the Fun Integration Theory identified 81 determinants of fun, with positive team dynamics, trying hard, and positive coaching being the three most important dimensions of fun or enjoyment in youth sport. Côté, Baker, and Abernethy (2003) developmental model of sport participation proposes that children progress through a number of stages of participation in sport, with the importance of enjoyment varying between these stages. Enjoyment is proposed to be of greatest importance for continued participation during the *sampling years* (ages 7-12) when it is recommended that children participate in a number of different sports. Enjoyment continues to play an important role during the *specializing years* (ages 13-15) when the focus should be on one or two sports. It is not until around the age of 15, when some sport participants enter the *investment years*, that the salience of enjoyment is replaced by a greater focus on skill development in a single sport.

These trends indicate that the ages when enjoyment is of the utmost importance correspond with the ages reported to have the highest rate of dropout (Boiché & Sarrazin, 2009). This suggests that exploring the antecedents of enjoyment during late childhood and adolescence could provide insight into factors underlying dropout in youth sport. Moreover, as much of the literature surrounding enjoyment and dropout in youth sport currently lacks a strong theoretical underpinning, there is a need to identify the antecedents using a sound theoretical framework.

2.5 The Need for a Unified Theoretical Framework

After decades of largely descriptive research, recent sport attrition research has begun to incorporate theoretical frameworks and models (Balish et al., 2014). However, there remains a lack of unification between models within the field as research has been too compartmentalized and different theories have been tested independently in unrelated studies (Gould, 2007). For example, self-determination theory (Ryan & Deci, 2000) has commonly been used to explain correlates of dropout at the cognitive level, such as a lack of intrinsic motivation, whereas the concept of motivational climates which is grounded in achievement goal theory (Nicholls, 1989) has often been used to explain correlates of dropout at the social level. Crane and Temple's (2015) systematic review was framed in leisure constraints theory which examines intrapersonal, interpersonal, and structural constraints to participation, however, although it uses this theory to organize factors in the literature associated with dropout, it does not propose an explanation as to how these factors interact and influence each other.

In the current article, we propose an integrative model incorporating both cognitive and social antecedents of dropout, along with hypotheses about how they

will interact to influence dropout and associated motivational outcomes such as enjoyment. Given the complex nature of dropout, it is important to acknowledge that factors other than those of cognitive and social nature exist (e.g., time and money constraints, lack of access, injury, deselection, etc.), and the proposed theory is not all-encompassing (Crane & Temple, 2015; Gould, 2007; Vella, Cliff, & Okely, 2014). However, by exploring enjoyment and dropout using a sound multi-level motivational model, we aim to enable researchers to gain a more comprehensive understanding of the area. This in turn could have significant theoretical and practical implications within the youth sport domain.

2.6 The Social-Cognitive Model of Achievement Motivation

Dweck and Leggett's (1988) social-cognitive model of achievement motivation has strong empirical evidence supporting its utility in predicting and influencing psychosocial outcomes for 11-17 year olds. Therefore, it may offer a useful framework for examining the antecedents of dropout in youth sport. Emanating from early achievement goal research, the SCMAM proposes that differences in beliefs about the nature of ability (known as implicit beliefs) work in conjunction with one's achievement goals to determine how events are interpreted within achievement settings; in turn, this leads to differences in cognitive, affective, and behavioural responses. Before outlining the components of the SCMAM, a brief discussion of the historical context is necessary.

History of Achievement Goal Research. Dating back to the late 1970s, achievement goal research was conducted primarily in the education domain, pioneered by researchers including John Nicholls, Carol Dweck, Martin Maehr, Glyn Roberts, and Carol Ames (Harwood, Spray, & Keegan, 2001). Achievement goals refer to the purpose or focus that guides behaviour in achievement contexts (Maehr,

1989). Although there was some variation among the theorists' viewpoints on the antecedents of achievement goals, the basic tenet that competence is at the heart of achievement-related behaviour remained consistent (Harwood et al., 2008). Traditional achievement goal theory incorporates two achievement goals, known as mastery and performance goals (Nicholls, 1984). Mastery goals are primarily concerned with developing competence and improving ability, whereas performance goals are primarily concerned with demonstrating competence in comparison to others (Dweck & Leggett, 1988). Nicholls (1984) proposed that mastery goals will lead to more positive and adaptive motivational outcomes through increased effort, persistence, and achievement striving. Conversely, given achievement for indiviudals adopting performance goals relies on external factors (e.g., other peers' ability), lower perceptions of ability can result in negative or maladaptive responses (e.g., avoiding challenge, reduced persistence, and task withdrawal).

In the years after conceptualisation, achievement goal research began to branch into the sport domain through the works of Glyn Roberts (1984, 1992) and Joan Duda (1987), based on Nicholl's theoretical foundation (Harwood et al., 2008). Since this time, a plethora of studies have explored achievement goals in sport. This research has linked a mastery goal orientation with postive outcomes including increased effort, self-esteem, and satisfaction (Biddle, Wang, Kavussanu, & Spray, 2003). Notably, original and contemporary research has consistently linked mastery goal orientations with enjoyment and intrinsic motivation in sport (Biddle, Wang, Kavussanu, et al., 2003; Duda & Nicholls, 1989). In contrast, a performance orientation coupled with low perceived competence has been associated with the most maladaptive outcomes including unsportsmanlike attitudes, aggressive behaviour, anxiety, and even withdrawal from sport (Biddle, Wang, Kavussanu, &

Spray, 2003; Cervelló, Escartí, & Guzmán, 2007; Roberts, 1984). Some research suggests that adopting both a mastery and performance goal orientation can facilitate enjoyment (Biddle, Akande, Vlackopoulos, & Fox, 1996), however other research has identified a negative or null relationship between performance goals and enjoyment (Biddle, Wang, Kavussanu, et al., 2003).

Implicit beliefs. Within Dweck and Leggett's (1988) SCMAM, implicit beliefs are proposed to be the antecedents of achievement goals. The two main types of implicit beliefs are known as incremental and entity beliefs. Incremental beliefs are proposed to orient individuals to adopt mastery goals, whereas entity beliefs orient individuals to adopt performance goals. Incremental beliefs are characterized by a view that ability is malleable, controllable, and increasable through learning. In contrast, entity beliefs are characterized by a view that ability is a fixed, uncontrollable, and stable trait (Dweck & Leggett, 1988). Research suggests that it is possible for individuals to endorse both entity and incremental beliefs simultaneously; however one set of beliefs usually dominates (Spray, Wang, Biddle, Chatzisarantis, & Warburton, 2006). Incremental beliefs are associated with more adaptive outcomes, whereas entity beliefs are associated with more maladaptive outcomes (Dweck & Leggett, 1988). These maladaptive outcomes have been shown to be most salient following setbacks or under conditions of adversity (Dweck & Leggett, 1988; Yeager et al., 2014). Given that setbacks are common in the sport context and that adolescence is a developmental period often associated with high social adversity, entity beliefs may have important implications for youth sport dropout. . It is theorized that for those who endorse entity beliefs/performance goals, high perceived competence can provide some protection against maladaptive outcomes, such as by promoting the selection and persistent pursuit of challenge

goals. This may be because there is less concern over the adequacy of ability and there is a greater chance that the individuals will obtain favourable judgements of competence as compared to others. However, low perceived competence will lead to a maladaptive behavioural response characterized by avoiding challenge and low persistence (Dweck, 1986; Dweck & Leggett, 1988). This is consistent with early research in youth sport that proposed that athletes with a performance goal orientation and low perceived competence would withdraw from their sport it they failed to attain their goals (Roberts, 1984). As such, there is a strong theoretical basis upon which to hypothesize that entity beliefs and performance goals will be associated with lower levels of enjoyment and dropout from youth sport.

Evidence across domains. Implicit beliefs have been shown to have a strong influence on adaptive cognitive, behavioural, and affective outcomes across multiple domains. This influence may be particularly important during times of social difficulty, such as during the transition to adolescence (Yeager et al., 2014). For example, research in the schooling (Blackwell, Trzesniewski, & Dweck, 2007; Dweck & Leggett, 1988) and physical activity (Kasimatis et al., 1996; Y. Ommundsen, 2001) domains has highlighted the link between incremental beliefs and positive outcomes such as improved motivation, greater self-efficacy, higher grades, greater satisfaction, less negative affect following setbacks, and greater persistence at difficult tasks, as compared to entity beliefs. In recent personality research, individuals endorsing entity beliefs had more negative immediate reactions to social adversity, as well as poorer health, increased stress, and lower grades in the long term than individuals endorsing incremental beliefs (Yeager et al., 2014). There is also some evidence for the importance of implicit beliefs within the sporting domain. For example, Spray et al. (2006) found that individuals endorsing entity

beliefs tended to attribute failure to ability, rather than effort, following failure in a sporting task. Furthermore, Biddle, Wang, Chatzisarantis, et al. (2003) reported incremental beliefs to be strong predictors of enjoyment in youth sport. However, despite a strong theoretical base and preliminary evidence that implicit beliefs are predictive of motivational and behavioural outcomes within multiple contexts (including sport) the SCMAM has not been applied in order to understand dropout from organized sport.

2.7 The Revised Social-Cognitive Model of Achievement Motivation

More recently, mixed results surrounding achievement goals and the role of perceived competence in the SCMAM have led to some suggested modifications (Cury et al., 2006; Wang, Liu, Lochbaum, & Stevenson, 2009). Firstly, it is proposed the 2x2 achievement goal framework replaces the original dichotomous framework. Secondly, perceived competence is proposed to be an independent antecedent of achievement goals, rather than a moderating factor. The r-SCMAM is illustrated in Figure 2.1 and the modifications are discussed in more detail below.

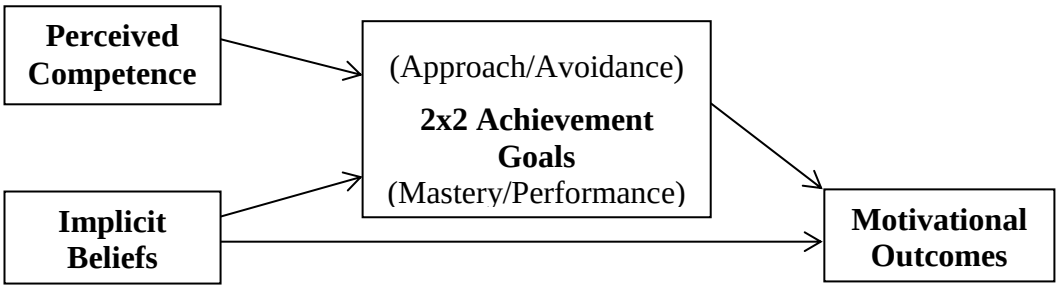

Figure 2.1. The revised social-cognitive model of achievement motivation

2.7.1 The 2x2 achievement goal framework. Cury et al. (2006) proposed that the 2x2 achievement goal framework (Elliot & McGregor, 2001) be incorporated

into the SCMAM as intermediary variables linking implicit beliefs with motivational outcomes in achievement contexts. This framework introduces a valence dimension (approach-avoidance) to the original dichotomous framework (performance-mastery). Approach goals have positive psychological attractiveness and the focus is on attaining and/or demonstrating competence, whereas avoidance goals have negative psychological value and the focus is on avoiding demonstrating incompetence (Elliot & McGregor, 2001). Previous research utilizing the dichotomous framework has produced inconsistent results in regards to performance goals as they have been linked with both positive and negative outcomes (Elliot, 1997). It is possible that these mixed findings may be due to a lack of explanatory power and difficult-to-interpret results caused by collapsing the approach-avoidance dimension into a single dichotomous construct (Cury et al., 2006). For example, research utilizing the r-SCMAM in the education and physical activity domains has highlighted the role of performance-avoidance goals in adding to the negative influence of entity beliefs and low perceived competence on achievement outcomes. Conversely, mastery-approach goals have been shown to facilitate the positive influence of incremental beliefs and high perceived competence on achievement outcomes. However, the research found that performance-approach and mastery-avoidance goals had a weaker influence on achievement outcomes (Cury et al., 2006; Stevenson & Lochbaum, 2008). Given these varying results, it is possible that treating approach-avoidance goals as combined constructs may account for previous inconsistencies. Recent research in the sport context has also highlighted the usefulness of the approach-avoidance dimension by demonstrating that mastery-approach goals are associated with the most adaptive outcomes (including enjoyment), whereas mastery- and performance-avoidance goals have been

associated with the most maladaptive outcomes (Stenling, Hassmén, & Holmström, 2014). Therefore, the added approach-avoidance dimension might also be valuable for understanding youth sport dropout.

2.7.2 The role of perceived competence. Previous research has found that individuals with a high performance goal orientation and low perceived competence would be most likely to withdraw from sport (Cervelló et al., 2007; Roberts, 1984). However, in other research dropout occurred when athletes had a mastery goal orientation coupled with low perceived competence (Whitehead, Andrée, & Lee, 2004). Potential explanations for mixed results have been offered. For example, children may not have experienced sufficient failure to induce the maladaptive behavioural patterns that are typically associated with performance goals, or perhaps there exists an overriding negative influence of social factors. Nonetheless, the mixed findings have led to perceived competence being given a more central role in the r-SCMAM, where it is proposed to be an independent antecedent of achievement goals (Cury et al., 2006; Whitehead et al., 2004). It is proposed that perceived competence will influence the valence component (approach-avoidance) of the achievement goal adopted, but not the definition component (performance-mastery). Therefore, high perceived competence will be associated with mastery-approach and performance-approach goals due to a focus on positive possibilities, whereas low perceived competence will be associated with mastery-avoidance and performance-avoidance goals due to a focus on negative possibilities (Cury et al., 2006). This may explain why the link between performance goals and negative outcomes, such as dropout, has been tenuous in research using the original SCMAM. For example, according to the SCMAM, entity beliefs and performance goals coupled with high perceived competence will result in a mastery oriented behaviour pattern characterized by

challenge seeking and task persistence (Dweck & Leggett, 1988). Therefore, high perceived competence may be attenuating the maladaptive behavioural outcomes of performance goals. The changed role of perceived competence within the r-SCMAM as well as the added approach-avoidance dimension may clarify previously mixed findings as low perceived competence leading to performance-avoidance goals would be expected to lead to the most detrimental outcomes, such as dropout. In contrast, high perceived competence leading to performance-approach goals may lead to continued participation.

2.8 Creating an Integrative Motivational Framework

It has long been recognized that there is more to dropout than internal factors, and that contextual sources must also be acknowledged (Balish et al., 2014; Vella, Cliff, & Okely, 2014). Recent research investigating youth sport attrition highlighted the multilevel nature of factors underlying dropout with the two major contributing components being intrapersonal and interpersonal factors (Balish et al., 2014; Crane & Temple, 2015). Therefore, in addition to the aforementioned cognitive factors, it is important to consider the influence of social factors on dropout and potential precursors such as enjoyment (Ullrich-French & Smith, 2006; Vella, Cliff, & Okely, 2014). This notion has been demonstrated in other well established motivational theories in the social-cognitive domain. For example, Bandura's (1986) social cognitive theory proposes that behaviour both influences and is influenced by personal factors, such as cognitions, and environmental factors.

Therefore, although the r-SCMAM illustrates cognitive factors potentially implicated in dropout, the incorporation of social factors in the model could potentially strengthen its ability to predict dropout and associated motivational outcomes. For example, many studies have demonstrated that key social figures in

the sport environment, such as parents, peers, and coaches, are associated with levels of enjoyment and commitment in youth sport (Balish et al., 2014; Chan, Lonsdale, & Fung, 2012; Sánchez-Miguel, Leo, Sánchez-Oliva, Amado, & García-Calvo, 2013; Ullrich-French & Smith, 2006). Additionally, in Crane and Temple's (2015) recent review of youth sport dropout, pressures from family, peers, and coaches were cited as the primary interpersonal factors related to the decision to drop out. Therefore, although individuals who adopt incremental beliefs and mastery-approach goals would be expected to have the greatest levels of enjoyment and be least likely to drop out of sport, low levels of support from important social figures may lead to decreased enjoyment levels and a greater likelihood to drop out. In contrast, despite expecting that entity beliefs and performance-avoidance goals will lead to low enjoyment and dropout in sport, it may be possible that high levels of support from key social agents could act as a buffer against these negative effects. The r-SCMAM incorporating the influence of perceptions of relationships with key social agents is illustrated in figure 2.2.

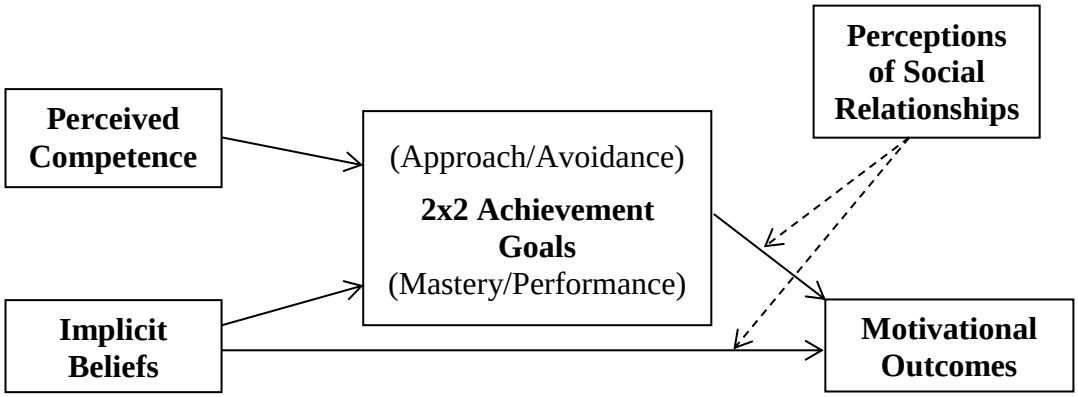

Figure 2.2. The revised social-cognitive model of achievement motivation with perceptions of social relationships moderating the direct and indirect pathways

It is important to note that the role of social influences in sport may be complex. For example, other research has linked the motivational climate created by parents, peers, and coaches to implicit beliefs and commitment to sport (Atkins et al., 2013; Cury, Da Fonséca, Rufo, & Sarrazin, 2002; Olympiou, Jowett, & Duda, 2008). According to this research, a task-involving motivational climate (i.e., encourages self-referenced improvement and rewards effort) is linked with more positive outcomes and adaptive motivational patterns for children and adolescents, including greater enjoyment and commitment to sport, than an ego-involving motivational climate (i.e., emphasizes success in comparison to others). Furthermore, support from parents, peers, and coaches has been shown to be linked with perceived competence in adolescent sport participants (Chan et al., 2012; Lauer, Gould, Roman, & Pierce, 2010; Ullrich-French & Smith, 2006). As such, it is clear that social factors play an important role in enjoyment and sport participation and should therefore be investigated in this context. However, for simplicity, the current paper does not aim to investigate all possible relationships and focuses on the moderating role of social agents on the direct and indirect pathways in the model. That is, whether positive social relationships can buffer against the negative outcomes associated with maladaptive implicit beliefs/achievement goals, or whether they can attenuate the positive outcomes associated with adaptive implicit beliefs and achievement goals. To our knowledge, there is currently no research investigating social relationships in this role. The addition of social influences to the SCMAM would provide greater utility for researchers, provide a framework for empirical investigation, increase its capability to predict salient outcomes such as dropout, provide hypotheses regarding potential causal pathways, and provide avenues for intervention.

2.9 The Role of Social Influences in Youth Sport

Athletes' perceptions of others' behaviours (e.g., parental behaviours) do not always match the self-reports given by significant others (Lindstrom Bremer, 2012). This is important because the perceptions of behaviours appear to be more important to well-being than the actual behaviours (Babkes & Weiss, 1999). Therefore, the current paper focuses on the athletes' perceptions of three major social influences, rather than the self-reported behaviours of parents, peers, or coach.

2.9.1 Parents. Parents play the most prominent role in early sport participation (Côté, 1999; Horn & Horn, 2007). During the sampling years (7-12 years), parents often play the 'provider' role as they are relied upon to initiate the sport experience and be a source of tangible support, such as finance and transportation (Côté, 1999). As skills develop in the specializing years, the financial and time requirements of parents often increase and they become heavily relied upon for socio-emotional support to aid the child in understanding the sport experience and developing self-worth (Côté, 1999; Fredricks & Eccles, 2005). Along with tangible and socio-emotional support, parental support can also involve providing informational support (e.g., advice about sport or instructions about rules and techniques) and companionship (e.g., attending sports events) (Côte & Hay, 2002). Perceived parental support is considered vital to the development of competence and has been consistently associated with greater enjoyment levels and continued participation in sport (Leff & Hoyle, 1995; Sánchez-Miguel et al., 2013). In contrast, perceived parental pressure and over-involvement have been linked with more negative outcomes such as anxiety, burnout, and dropout (Crane & Temple, 2015; Leff & Hoyle, 1995). Previous research has demonstrated that parental support can act as a buffer against stress related to poor performance (Van Yperen, 1995).

However, the role of parental support as a moderator of the relationships between implicit beliefs/achievement goals and motivational outcomes has not been explored. Given the array of evidence highlighting the importance of parental relationships on motivational outcomes in youth sport, there is a strong basis upon which to hypothesize that positive perceptions of relationships with parents will be a protective factor against dropout.

2.9.2 Peers. Peers become increasingly influential as children age and are of particular significance during adolescence (Ullrich-French & Smith, 2006). While it is known that their influence is different to that of parents or coaches, the influence of the peer group on dropout remains a relatively unexplored area (Keegan, Harwood, Spray, & Lavallee, 2009). Positive peer relationships involve emotional support, help and guidance, self-esteem enhancement, intimacy, prosocial behaviour, and conflict resolution which may lead to greater motivation to participate in sport (Weiss & Smith, 1996). In contrast negative peer relationships involving conflict, judgments or comparisons, infrequent opportunities for interaction, and betrayal may inhibit motivation to participate in sport (Sagar, Lavallee, & Spray, 2007; Weiss & Smith, 1996).

Within the youth sport psychology literature, the two main dimensions of peer relationships include peer acceptance and friendship quality. Peer acceptance reflects the level of liking and status within the peer group, whereas friendship quality refers to having a close dyadic relationship (Bukowski & Hoza, 1989). Both dimensions have been linked with positive motivational outcomes in youth sport including increased self-worth, reduced stress and anxiety, greater enjoyment, and stronger commitment (McDonough & Crocker, 2005; Smith, Ullrich-French, Walker, & Hurley, 2006; Ullrich-French & Smith, 2006; Weiss & Smith, 2002). It

has been theorized that a high quality friendship may offset the potential negative effects of low peer acceptance, leading researchers to continually push for the consideration of both variables within studies (Smith, 1999). However, it is unknown how these dimensions will affect the relationship between implicit beliefs/achievement goals and motivational outcomes in youth sport. Similar to parental support, it is feasible that positive peer relationships may act as a protective factor against dropout. Additionally, given that prior research suggests that parents and peers can influence motivation in an additive and collective fashion (Ullrich-French & Smith, 2009), combinations of positive parental and peer relationships would be expected to have the most positive implications for preventing dropout.

2.9.3 Coaches. Coaches in youth sport are in a position of authority and responsibility, provide socio-emotional support, and are often held in high esteem by athletes (Keegan et al., 2010). Additionally, as children progress beyond the sampling years, the coach becomes required for more skill and technical instruction (Keegan et al., 2009). Coaches also play an integral role in facilitating positive youth development as they teach athletes skills applicable to both the sport and non-sport setting (Fraser-Thomas et al., 2005; Vella, Oades, & Crowe, 2013). Their influence and positive reinforcement has been linked with youth athletes' effort and enjoyment in sport (Chan et al., 2012; Gould, 2007; Visek et al., 2015). Moreover, quality coach-athlete relationships – characterised by perceptions of closeness, commitment, complementarity, and co-orientation – have been linked with increased motivation and persistence in youth sport (Gould, Collins, Lauer, & Chung, 2007; Jowett & Ntoumanis, 2004; Jowett & Poczwardowski, 2007; Riley & Smith, 2011). However, coach conflict is a commonly cited reason for sport withdrawal and it is proposed that the coach is an influencing factor in approximately one-third of dropouts

(Armentrout & Kamphoff, 2011). Previous research has found athletes who dropped out of their sport perceived their coaches to be more controlling, less motivating, less supportive and encouraging, and reported a lack of communication (Fraser-Thomas et al., 2008; Pelletier, Fortier, Vallerand, & Brière, 2001). Barnett, Smoll, and Smith (1992) conducted an experiment to test the effects of enhancing the coach-athlete relationship on dropout in youth sport. They found that athletes coached by coaches who had received Coach Effectiveness Training (CET) had more positive evaluations of their sport, teammates, and coaches, as well as significantly lower dropout rates than the control group. It is therefore evident that the coach plays a crucial role in youth sport participation, and positive coach-athlete relationships could potentially inhibit the negative implications associated with maladaptive implicit beliefs and achievement goals. Moreover, as previously mentioned, research suggests that combinations of social relationships could be important and that having two or more positive social relationships could be a greater predictor of sport participation than one or no positive social relationships (Ullrich-French & Smith, 2009). Therefore, more positive relationships with the three key social figures would be expected to have the most significant influence on dropout.

2.10 Implications for Youth Sport and Future Research

The motivational model in the current paper proposes that individual differences in implicit beliefs, perceived competence, and achievement goals, along with the influence of key social agents may have important implications for dropout in youth sport. Gaining a theoretical understanding of youth sport dropout could be an important stepping stone towards preventing dropout and the associated negative outcomes; however the utility of the r-SCMAM is yet to be tested in this context. As outlined in this paper, it is therefore a priority for researchers to examine the utility

of this (or other) theoretical framework in predicting and potentially preventing dropout. Furthermore, the incorporation of social factors in the r-SCMAM is a necessary future step for theory development. This will provide a framework for empirical investigation, increase predictive capability, present hypotheses regarding potential causal pathways, and promote research interventions in youth sport. Previous research has tended to focus on the effect of only one or two of the key social figures in this relationship (Ullrich-French & Smith, 2006). Therefore future studies would benefit from investigating the influence of all three major social agents (parents, peers, and coaches) both independently and in combination. This could be done using statistical techniques such as latent profile analysis which investigate whether individuals fall into distinct groups based on combinations of variables, such as parent, peer and coach relationships. As research to date is largely dominated by cross-sectional research designs, future dropout research should also incorporate longitudinal and experimental investigations. Cross-sectional designs make it impossible to determine which factors may make causal contributions to one's decision to drop out of organized sport. Longitudinal analyses allow for predictive mechanisms to be explored more robustly, while experimental research will further allow causation to be explored. Furthermore, although it is known that the prevalence of dropout in youth sport is high, statistics often vary significantly. This may be because it is hard to distinguish between those who drop out completely (sport-general dropout) and those who transfer to another sport (sport-specific dropout). Longitudinal investigations could potentially clarify this issue as well as advance our understanding of how reasons for dropout change over time.

Research using the r-SCMAM to investigate the social and cognitive factors influencing dropout, and factors like enjoyment, could also be of practical value in

the development of interventions. Although the r-SCMAM proposes that implicit beliefs and perceived competence are independent antecedents of achievement goals, research suggests that perceived competence is a relatively stable characteristic and that implicit beliefs may be more adaptable (Lintunen, Valkonen, Leskinen, & Biddle, 1999). Therefore, researchers may focus on decreasing the salience of entity beliefs and increasing the salience of incremental beliefs in order to lead to more adaptive outcomes in youth sport. Furthermore, given the key role of social agents in enjoyment and participation in youth sport, researchers could aim to alter these underlying implicit belief processes through social mediums. For example, it has been proposed that coaches can promote incremental beliefs by focusing on effort and persistence, facilitating challenge, promoting value of failure, defining success as effort, the promotion of learning, and providing high expectations (Vella, Cliff, Okely, Weintraub, & Robinson, 2014).

Future research is necessary to explore the utility of the r-SCMAM to achieve the aforementioned theoretical and practical developments in youth sport. A number of key hypotheses must be tested. These include;

1. Incremental beliefs will be associated with more positive motivational outcomes, such as higher levels of enjoyment, and in turn less dropout
2. Entity beliefs will be associated with more negative motivational outcomes, such as lower levels of enjoyment, and in turn greater dropout
3. Perceived competence will be an independent antecedent of achievement goals
    a. High perceived competence will lead to approach goals
    b. Low perceived competence will lead to avoidance goals

4. Achievement goals will mediate the relationship between implicit beliefs and motivational outcomes/dropout
    a. Incremental beliefs and mastery-approach goals will be associated with the highest levels of enjoyment and lowest dropout
    b. Entity beliefs and performance-avoidance goals will be associated with the lowest levels of enjoyment and highest dropout
5. Perceived parental support, friendship quality, peer acceptance, and the quality of the coach-athlete relationship will moderate the relationship between implicit beliefs and motivational outcomes/dropout
6. The r-SCMAM can be used as a motivational model to predict dropout and associated motivational outcomes in youth sport

2.11 Conclusion

Given the important health and economic implications of sport participation, gaining an understanding of the reasons underlying the high rate of dropout from youth sport is of significant interest (Australian Sports Commission, 2009; Eime et al., 2013). However, there remains limited theoretically driven research in the area, particularly of longitudinal and experimental design. The r-SCMAM may offer a useful theoretical framework to investigate dropout and proxy measures of dropout such as enjoyment in youth sport. It is proposed that implicit beliefs about ability, perceived competence, and achievement goals may have important implications for understanding these factors. In addition, the incorporation of the three key social agents in the model is a necessary step for theory development and may enable researchers to gain a more comprehensive understanding of dropout in youth sport. Future research utilizing this framework may have important theoretical

contributions to sport psychology, and also broader practical implications for the development of evidence- and theory-based interventions to prevent dropout from organized sport.

Chapter 3: Enjoyment and Behavioural Intention Predict Participation and Dropout in Organized Youth Sport

3.1 Foreword

The following study utilised data obtained over two time points to explore whether enjoyment and behavioural intentions are indicators of youth sport dropout. Although the cross-sectional research presented in Chapters 4 and 5 was conducted prior to the work in the present chapter, the findings provide support for the use of enjoyment and behavioural intention as proxy measures throughout the remainder of the research program.

The following research has been published in the *Journal of Physical Activity and Health*.

3.2 Introduction

Organized sport is globally one of the most popular types of physical activity among youth (Tremblay et al., 2014), and has many immediate and long-term benefits across multiple domains (e.g., physical, psychosocial, financial; Bailey, Hillman, Arent, & Petitpas, 2013). However, dropout from youth sport remains a major issue during adolescence (Balish et al., 2014), and predicts adverse outcomes (relative to continued participation in sport) including decreased mental health and well-being (Vella, Cliff, Magee, et al., 2014; Vella et al., 2015). Despite this, research exploring dropout is scarce and more studies are needed to better understand and prevent dropout.

Methodological challenges to researching sport dropout include the need for longitudinal designs with large samples that can be followed prospectively to identify individuals who drop out. This is particularly difficult when recruiting through sports

clubs, as individuals who continue participating but change to another club (e.g., at a higher competition level) may be incorrectly classed as having dropped out of the sport completely. Thus, few prospective studies have been conducted, and most studies have been retrospective or have used proxy measures of dropout based on commonly identified reasons for withdrawal (Balish et al., 2014; Crane & Temple, 2015). Two frequently used proxy measures are enjoyment and behavioural intentions (Atkins et al., 2015; Gardner, Vella, & Magee, 2017), but the validity of these as predictors of participation and dropout behaviour over time are not known. In this paper, we investigate whether enjoyment and behavioural intentions translate into sport participation behaviour and can therefore be used as valid indicators within youth sport research.

Enjoyment in youth sport is considered the greatest predictor of commitment, and lack of enjoyment is the most frequently cited predictor of dropout (Crane & Temple, 2015; Visek et al., 2015). Theories such as the Fun Integration Theory (FIT; Visek et al., 2015) provide a framework for understanding the determinants of enjoyment (or fun). For example, FIT proposes 81 determinants important to youth sport participation, which reflect 11 distinct dimensions and four fundamental underlying tenets: social fundamentals (includes team friendships, team rituals, and positive team dynamics), internal fundamentals (includes learning and improving, trying hard, and mental bonuses), external fundamentals (includes positive coaching, game time support, and swag), and contextual fundamentals (includes practices and games). Many studies support the link between enjoyment and sport participation; however the relationship has typically been investigated retrospectively, where participants recalled their reasons for dropout after it had occurred (Crane & Temple, 2015). Although time- and cost-efficient, these retrospective approaches are likely to

be inaccurate, biased (e.g., recall bias), and provide only partial insight into the temporal associations between variables (Morrow, 2010). Prospective studies examining the temporal associations between enjoyment and dropout are limited. One available study (Ullrich-French & Smith, 2009) reported a non-significant association, but this study could not distinguish between individuals who dropped out of the sport completely or continued participating at another club. The study therefore assessed team-specific dropout, rather than sport-specific or complete dropout. Prospective research that follows individuals who may discontinue playing for one club/sport but continue participating for another club/different sport is needed to clarify whether enjoyment is a valid predictor of sport participation in these instances.

In contrast to the FIT, the Theory of Planned Behaviour (TPB; Ajzen, 1991) focuses on cognitive antecedents of behaviour. TPB centres on an individual's behavioural intentions which are determined by their attitude toward the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). Consistent with the TPB, intentions have been shown to be powerful predictors of behaviour in physical activity contexts (Hagger, Chatzisarantis, & Biddle, 2002) and thus are used as indicators of future sport participation behaviour (Atkins et al., 2015; Gardner, Magee, & Vella, 2016; Gardner et al., 2017). A small number of prospective studies found that intentions predict dropout behaviour in youth sport; however these studies focused on only one sport (Nache et al., 2005; Sarrazin et al., 2002). Further research is needed to determine whether these findings generalize across a range of sports to support the use of behavioural intentions as a valid and reliable indicator within youth sport research. Furthermore, the studies did not consider enjoyment, and it

would be valuable to compare how both affective and cognitive factors relate to dropout behaviour.

The present study therefore examines whether enjoyment and behavioural intentions predict dropout behaviour at one-year follow-up. Previous research indicates that the decision to dropout is complex and influenced by a number of factors in addition to behavioural intentions and enjoyment. For example, research suggests that dropout is particularly evident in females as they progress through adolescence, so age and sex are important factors to consider (Eime et al., 2016). Additionally, dropout may differ between recreational and competitive sport environments (Balish et al., 2014). Perceived competence is also considered a key determinant of youth physical activity (Babic et al., 2014) with a recent systematic review by Crane and Temple (2015) indicating that a lack of perceived competence was the second most common intrapersonal variable associated with dropout. Crane and Temple (2015) further identified relationships with parents, coaches, and peers as prominent interpersonal predictors of dropout. This is supported by other research linking perceptions of parental support, quality coach-athlete relationships, peer acceptance, and quality friendships with commitment and continued participation (McDonough & Crocker, 2005; Nunomura & Oliveira, 2013; Rottensteiner et al., 2015; Ullrich-French & Smith, 2009).

We therefore hypothesize that age, sex, competition level, perceived competence, parental support, coach-athlete relationship quality, peer acceptance, and friendship quality will be associated with sport participation behaviour. However, given lack of enjoyment is the most frequently cited reason for dropout (Crane & Temple, 2015; Visek et al., 2015) and behavioural intentions are powerful predictors of behaviour in physical activity contexts (Hagger et al., 2002), we expect

enjoyment and behavioural intentions will predict continued participation/dropout over and above these variables. It is expected that individuals reporting greater enjoyment and a greater intention to continue in their sport will be more likely to continue participation and less likely to drop out.

3.3 Method

3.3.1 Participants and Procedure

A total of 327 regular sport participants (i.e., reported participation in organized sport at least once per week for at least three months or an entire season over the past year; Active Healthy Kids Australia, 2014) aged between 11 and 15 years (M_{age}= 13.03; 77 males, 250 females) were recruited from two private schools in Sydney, New South Wales, Australia. Participants responded to a battery of questionnaires (approx. 15-20 minutes) assessing sport participation, enjoyment, intention to continue, perceived competence, and perceptions of key social relationships during their regular Physical Education lesson (Time 1). Participants completed the same questionnaires one-year later (Time 2), with additional sport participation/dropout questions.

3.3.2 Measures

Enjoyment. The Enjoyment subscale from the Sport Commitment Model (Scanlan, Simons, Carpenter, Schmidt, & Keeler, 1993) was used to measure participants' levels of enjoyment in their main sport. Participants responded to four items (e.g., "Do you enjoy playing your main sport?") on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*). The scale's validity and reliability has been supported in comparable populations (McDonough & Crocker, 2005). Cronbach's alpha in the current study was $\alpha = .96$.

Intention to Continue. One item was designed to measure the participant's intention to continue in their sport ("I intend to participate in my main sport next season"). Participants responded on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Dropout. Participants were asked to nominate their main sport at Time 1 and Time 2. If participants reported sport participation at Time 2, they were asked whether their current main sport was their main sport at Time 1. Participants who responded "no" then reported whether they discontinued participating in their Time 1 main sport completely, or they continued participating in their Time 1 main sport as a secondary sport.

Covariates. Participants' age, sex, level of competition, perceptions of competence, parental support, coach-athlete relationship quality, friendship quality, and peer acceptance were included as covariates.

Participants reported the competition level of their main sport as either basic (e.g., local club), advanced (e.g., regional representation), pre-elite (e.g., state representation), or elite (e.g., national representation).

Perceived competence was assessed using the Athletic Competence subscale of Harter's (1985) Self-Perception Profile for Children ($\alpha = .78$). The scale consists of six items presented in a structured-alternative format (e.g., 'some kids do very well at all kinds of sports but other kids don't feel that they are very good when it comes to sports'). Participants were instructed to choose which statement is most like them, and then indicate whether the statement is 'really true for me' or 'sort of true for me'. Items are scored from 1 to 4, with higher scores indicating greater perceived competence.

Parental support was assessed using Van Yperen's (1995) Perceived Parental Support Scale (α = .78). The scale consists of four items (e.g., 'My parents are proud of me because I play for my club') rated on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The participants were instructed to answer each item in regards to their main sport. The scale has been shown to be valid and reliable in the youth sport context (Lafferty & Dorrell, 2006).

Quality of the coach-athlete relationship was assessed using Jowett and Ntoumanis' (2004) Coach-Athlete Relationship Questionnaire (α = .94). The questionnaire consists of 11 items rated on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The questionnaire contains three subscales: Closeness (e.g., 'I trust my coach'), Commitment (e.g., I feel committed to my coach'), and Complementarity (e.g., When I am coached by my coach, I feel responsive to his/her efforts). However, previous research has found the subscales to be highly related and thus a composite score of the three subscales has been used to indicate an overall perception of the quality of the coach-athlete relationship (Adie & Jowett, 2010; Lafrenière, Jowett, Vallerand, & Carbonneau, 2011). Given the correlations in the present study ranged from .83 - .85, an overall score was used with higher scores representing greater perceived coach-athlete relationship quality.

Perceived friendship quality was assessed using Weiss and Smith's (1999) Sport Friendship Quality Scale (α = .90). The scale consists of 22 items that tap into sex dimensions of friendships: self-esteem enhancement and supportiveness (e.g., 'After I make a mistake my friend encourages me'), loyalty and intimacy (e.g., 'My friend and I stick up for each other in sports'), things in common (e.g., 'My friend and I do similar things'), companionship and pleasant play (e.g., 'My friend and I spend time together'), conflict resolution (e.g., 'My friend and I try to work things

out when we disagree'), and conflict (e.g., 'My friend and I get mad at each other'). Responses were rated on a five-point scale ranging from 1 (*not at all true*) to 5 (*really true*). Participants were instructed to answer questions with respect to their closest friend in their main sport.

Peer acceptance was assessed using Harter's (1985) Social subscale of the Self-Perception Profile for Children ($\alpha = .82$). The scale consists of six items adapted to be specific to sport. Items were presented in a structured-alternative format (e.g., 'Some kids find it hard to make friends in their team/sport but other kids find it pretty easy to make friends in their team/sport'), with participants instructed to choose which statement is most like them with respect to their main sport. Participants are then instructed to indicate whether the statement is 'really true for me' or 'sort of true for me'. Items are scored from 1 to 4, with higher scores indicating greater perceived peer acceptance.

3.3.3 Data Analysis Plan

For all variables, distributions were inspected and no data were removed. T-tests then examined differences between individuals who reported continued participation in their main sport and individuals who dropped out of their main sport. Hierarchical logistic regression models examined the association of Time 1 predictors with Time 2 dropout. In step 1, we modelled the covariates (age, sex, competition level, perceived competence, parental support, coach-athlete relationship quality, friendship quality, and peer acceptance) as predictors of drop out. In step 2, we added enjoyment and intention to continue. All analyses were performed using IBM SPSS statistics software (version 21).

3.4 Results

3.4.1 Descriptive statistics

At one-year follow-up, data were available from 273 sport participants (62 males, 211 females) aged 11 to 15 years at baseline (M_{age} = 13.01, *SD* = .83); the retention rate was 83.5%. At Time 2, 247 (90%; 54 males, 193 females; M_{age} = 13.04 years) continued participation (reported the same main sport at Time 1 and Time 2 or reported a new main sport at Time 2 and continued participating in their Time 1 sport as a secondary sport), whereas 26 (10%; 8 males, 18 females; M_{age} = 12.73 years) had dropped out (reported complete discontinuation in the sport reported at Time 1). On average, participants who continued participation had participated in their main sport for 5.44 years (*SD* = 3.01), mostly participated in team sports (n = 153, 61%), and predominantly at a basic competition level (n = 134, 54.3%). Participants who dropped out had participated in their sport for an average of 3.23 years (*SD* = 2.28) and mostly dropped out of team sports (n = 14, 53.8%) at a basic competition level (n = 19, 73%). Descriptive statistics for the study variables are presented in Table 3.1. Independent samples *t* test indicated individuals who dropped out of their main sport differed significantly from those who continued participation on the main study variables.

Table 3.1

Descriptive Statistics

		Discontinued Participation (n = 26)		Continued Participation (n = 247)	
	Scale	*M*	*SD*	*M*	*SD*
Enjoyment	1-5	3.75[a]	1.09	4.76[b]	.51
Intention to Continue	1-5	3.54[a]	1.24	4.68[b]	.60
Perceived Competence	1-4	2.42[a]	.65	2.80[b]	.56
Parental Support	1-5	3.86[a]	.82	4.23[b]	.65
Coach-Athlete Relationship Quality Overall Score	1-7	4.73[a]	1.24	5.74[b]	1.01
Closeness Subscale	1-7	5.08	1.32	5.98	.99
Commitment Subscale	1-7	4.20	1.24	5.38	1.21
Complementarity Subscale	1-7	4.78	1.31	5.75	1.04
Friendship Quality	1-5	3.86[a]	.64	4.12[b]	.58
Peer Acceptance	1-4	2.53[a]	.45	3.00[b]	.64

Note. Means in the same row with the different superscripts are significantly different from each other at $p<.05$.

3.4.2 Hierarchical Logistic Regression

The results from the hierarchical logistic regression are presented in Table 3.2. Although all variables were correlated (Pearson's *r* ranged from .16 - .58), collinearity diagnostics were computed and indicated no evidence of multicollinearity (minimum tolerance = .52; maximum variance inflation factor = 1.93). Step 1 indicated that age, parental support, coach-athlete relationship quality, and peer acceptance significantly predicted dropout behaviour. With the additional inclusion of enjoyment and intention to continue, Step 2 had an improved overall model fit, a greater Nagelkerke R^2 value, and a higher percentage of correct predictions. Step 2 indicated that greater enjoyment (OR = .82; 95% CI, .67 - .99) and intention to continue (OR = .41; CI, .22 - .75) were inversely associated with

dropout. Peer acceptance was the only covariate that remained significantly associated with dropout in the presence of intentions and enjoyment.

Table 3.2

Hierarchical Logistic Regression Results

	Step 1			Step 2		
Variable	B	SE	Odds Ratio (95% CI)	B	SE	Odds Ratio (95% CI)
Constant	16.97	5.03	-	18.11	5.80	-
Age	-.73*	.31	.48 (.26-.88)	-.64	.35	.53 (.27-1.04)
Sex	-.69	.55	.50 (.17-1.46)	-.55	.59	.58 (.18-1.82)
Level	-.14	.28	.87 (.50-1.52)	-.02	.32	.98 (.52-1.83)
Perceived Competence	-.07	.07	.93 (.81-1.08)	.03	.09	1.03 (.87-1.23)
Parental Support	-.16*	.08	.85 (.73-1.00)	-.16	.09	.86 (.72-1.02)
Coach-athlete relationship quality	-.06**	.02	.94 (.90-.97)	-.008	.02	.99 (.95-1.04)
Friendship Quality	.01	.02	1.01 (.98-1.05)	.01	.02	1.01 (.97-1.06)
Peer Acceptance	-.14*	.07	.87 (.76-.99)	-.15*	.08	.86 (.74-.99)
Enjoyment				-.20*	.10	.82 (.67-.99)
Intention				-.90**	.31	.41 (.22-.75)
-2 Log likelihood	133.67			113.27		
Model Chi-Square	37.03, $df = 8$, $p < .001$			57.43, $df = 10$, $p < .001$		
Nagelkerke R^2	.274			.409		
Classification Accuracy	90.7%			93.7%		

Note. *$p<.05$, **$p<.01$

3.5 Discussion

The current study investigated whether enjoyment and behavioural intentions to continue in youth sport predicted participation and dropout behaviour at one-year follow-up. As expected, after taking into account age, sex, competitive level, parental

support, coach-athlete relationship quality, friendship quality, and peer acceptance, enjoyment and behavioural intentions to continue were associated with a reduced likelihood of dropout. Therefore, as enjoyment and behavioural intentions to continue increase, the risk of dropout decreases. This suggests that in youth sport contexts where lifelong participation is a goal, youth sport stakeholders should prioritize enjoyment over other outcomes such as winning.

The present study is the first to link levels of enjoyment with participation and dropout behaviour using a prospective design following individuals across clubs and sports, and addresses an important methodological gap in the literature. For example, previous research that recruited through soccer clubs, and could not follow individuals who changed to a club not involved in the study, found enjoyment did not predict team-specific dropout (Ullrich-French & Smith, 2009). However, the present results support findings of retrospective research and use of enjoyment as a proxy measure of sport-specific dropout (Crane & Temple, 2015; Gardner et al., 2017). The results also support the use of behavioural intentions as proxy measures within cross-sectional research (Atkins et al., 2015; Gardner, Magee, et al., 2016; Gardner et al., 2017), and corroborate the findings of other prospective research that investigated the link between intentions and dropout in a single sport (Nache et al., 2005; Sarrazin et al., 2002). Together, findings provide evidence of both affective and cognitive antecedents of dropout behaviour, as proposed by the FIT and the TPB.

Although not a central aim of the study, peer acceptance was also associated with dropout behaviour. The importance of peer acceptance for enjoyment and sustained participation is consistent with the FIT (Visek et al., 2015) as three out of the eleven dimensions of fun (positive team dynamics, team friendships, team rituals) relate to peer relationships, with positive team dynamics rated the highest importance

of any dimension. Given friendship quality focuses on relationships with one close friend in sport, the team/group focus of these social fun-dimensions may explain why it was not a significant predictor of dropout. Similarly, although the game time support dimension contains fun-determinants related to parents, these do not clearly map onto the items within the parental support scale. Additionally, previous research found positive peer relationships predicted continued participation when perceived mother relationship quality was low, suggesting parents may be less influential than peers in this context (Ullrich-French & Smith, 2009). Although the FIT identifies positive coaching as another important fun-dimension, the present study examined player perceptions alone, which may indicate that parents and coaches place more emphasis on the role of the coach than players. Chan et al. (2012) further highlighted the influential role of peers during adolescence as they were found to be more important for athlete enjoyment and effort than parents and coaches.

The present findings could inform interventions aimed at preventing dropout by identifying at risk individuals based on enjoyment and future intentions, exploring the factors contributing to their reduced enjoyment levels and/or future intentions, and providing support or alternative options. For example, consistent with the FIT, where perceived competence is low, providing options such as skill development programs where individuals are taught new skills while being challenged to improve and learn from mistakes may aid competence development and in turn foster enjoyment and sustained participation (Visek et al., 2015). Similarly, if reduced levels of enjoyment and intention to continue reflect difficulties surrounding peer relationships, coaches or organizers might introduce team building activities or outings which can encourage the development of friendships and positive team dynamics. Furthermore, given the significant value of sport participation for long-

term health and development (Bailey, Hillman, et al., 2013; Vella, Cliff, Magee, et al., 2014), individuals could be encouraged to sample other sports that they might enjoy as sport-specific dropout may be a more positive outcome than withdrawal from all sport. The findings also have implications for future research as they support the use of enjoyment and intentions as indicators of future sport participation behaviour when prospective designs are not feasible.

Limitations of the current study include the small number of individuals who dropped out (although the sample size was sufficient to observe small to moderate effects), the low percentage of males, and the high socioeconomic status of participants (i.e., students from private high schools); these factors limit the generalizability of findings. The high socioeconomic status is particularly important because socioeconomic status is inversely associated with dropout; this may partially explain the low dropout rate observed in this study (Vella, Cliff, & Okely, 2014). Future research should measure and control for socioeconomic status, use larger sample sizes from a range of socioeconomic positions, and include similar proportions of males and females. Other study limitations include the high levels of enjoyment and intention to continue reported by the sample which may indicate a ceiling effect. Although past research supports the use of single item measures (Bergkvist, 2015), additional items measuring intention to drop out may have allowed a clearer distinction between individuals who dropped out or continued participation. Further, the social measures focused on specific and positive aspects of relationships. Future research might include broader measures or measures that look at negative influences, such as parental, coach, and peer pressure (Crane & Temple, 2015). Additionally, the present research only investigated sport-specific dropout. Research with larger sample sizes should investigate whether differences exist

between individuals who dropped out completely and those who dropped out of their main sport to participate in a different sport. Research might also benefit from having participants report their reasons for dropout as there are many factors that could influence their decision, such as work and study commitments or injuries.

The present research found support for the use of enjoyment and intentions as predictors of participation and dropout behaviour in organized youth sport. After taking into account relevant covariates, enjoyment and intention to continue were found to significantly predict sport participation behaviour. Findings support previous research using enjoyment and intentions as proxy measures of future sport participation behaviour (Atkins et al., 2015; Gardner, Magee, et al., 2016; Gardner et al., 2017). Additionally, findings justify future research and intervention strategies that target enjoyment and behavioural intentions to prevent dropout. Sport organizations and coaches should aim to establish enjoyable and supportive environments whilst monitoring sport participants' enjoyment levels and future intentions throughout the season.

Chapter 4: Continued Participation in Youth Sports: The Role of Achievement Motivation

The following research has been published in the *Journal of Applied Sport Psychology*.

4.1 Introduction

Approximately 50% of youth regularly participate in organized sport in the USA, Canada, and England, with rates increasing to approximately two-thirds in Australia and New Zealand (Tremblay et al., 2014). Participation rates peak between the ages of 9 and 11 years; however, there is a marked decline in participation thereafter and it is estimated that approximately 30% of adolescent participants drop out each year (Active Healthy Kids Australia, 2014; Balish et al., 2014). Relative to those who maintain participation, individuals who drop out of sport or do not participate show distinctly lower levels of health-related quality of life and mental health (Vella, Cliff, Magee, et al., 2014; Vella et al., 2015). Given that sport participation during childhood and adolescence has important physical and psychosocial health implications (Eime et al., 2013), along with a significant economic value (Australian Sports Commission, 2009), research is needed to understand factors that contribute to continued participation in youth sport.

Lack of enjoyment is the single most commonly cited reason for dropout from youth sport (Crane & Temple, 2015). Enjoyment in this context refers to positive feelings such as fun and pleasure gained from the sport experience (Scanlan & Simons, 1992). According to the developmental model of sport participation (Côté et al., 2003), enjoyment is of the greatest importance for continued participation between 7 and 15 years of age; as noted above, this age range overlaps with the ages reported to have the highest attrition rates (Boiché & Sarrazin, 2009). This suggests

that examining the antecedents of enjoyment could provide improved understanding of youth sport participation and dropout. It is also important to consider other factors such as intentions to continue in sport. Intentions have been shown to be proximal predictors of actual behaviours, including sport participation, and may therefore offer an indication of future dropout behaviour (Balish et al., 2014; Prins et al., 2010). Examining the antecedents of enjoyment and intentions may be particularly useful in preliminary dropout research as examining actual dropout behaviour requires a longitudinal design. Therefore, this research could inform interventions aimed at reducing the high attrition rate which could lead to improved health outcomes for children and adolescents.

Achievement goal theory (Nicholls, 1984) is a commonly used theory in the field of sport psychology, particularly when considering sport participation and enjoyment (Duda, 2001). AGT incorporates two primary achievement goals which reflect the purpose or focus of behaviour in the achievement setting (Elliot, 1997; Maehr, 1989). The two achievement goals, known as mastery and performance goals, are proposed to predict cognitive, affective, and behavioural responses in achievement settings. Mastery goals are concerned with developing ability, mastering a skill, and self-referenced judgements of competence. Performance goals are concerned with proving ability and a normative definition of competence (Nicholls, 1984). Mastery goals have been linked with greater sport enjoyment, however there is less evidence regarding the influence of performance goals (Morris & Kavussanu, 2009). The current research aims to extend these findings and provide further insight into the processes contributing to enjoyment and participation in youth sport. This will involve utilizing the recently modified version of Dweck and

Leggett's social-cognitive model of achievement motivation (SCMAM) as a theoretical framework to explore the antecedents of enjoyment in youth sport.

The SCMAM (Dweck & Leggett, 1988) proposes that there are two implicit beliefs (incremental and entity beliefs) and two achievement goals (mastery and performance goals) which influence motivational outcomes in achievement contexts. Implicit beliefs refer to the underlying theories about one's own ability that orient individuals to pursue different goals. Incremental beliefs are characterized by a malleable and controllable conception of ability, whereas entity beliefs are encompassed by a fixed and stable conception of ability. The SCMAM proposes that incremental beliefs orient individuals to pursue mastery goals, and entity beliefs orient individuals to pursue performance goals. Therefore, achievement goals may be considered the more concrete aims through which individuals' implicit beliefs influence their cognitions, affect, and behaviour (Cury et al., 2006). Although individuals can hold both incremental and entity beliefs simultaneously and to different degrees, it is proposed that one set of beliefs is typically dominant (Dweck & Leggett, 1988; Spray et al., 2006). Research conducted in a number of different domains has highlighted the association between incremental beliefs and mastery goals with adaptive responses such as challenge seeking, greater motivation, increased enjoyment, and greater persistence (Biddle, Wang, Chatzisarantis, et al., 2003; Dweck & Leggett, 1988; Wang, Liu, & Biddle, 2003). In contrast, entity beliefs and performance goals have been linked with more maladaptive responses such as avoiding challenges, decreased motivation, and lower task persistence (Biddle, Wang, Chatzisarantis, et al., 2003; Dweck & Leggett, 1988). These negative responses have been shown to be most prominent following failure, setbacks, or under conditions of adversity (Dweck & Leggett, 1988). This could be particularly

important in the youth sport context where skills may be difficult to master and setbacks are common.

Mixed findings surrounding the role of achievement goals have recently led some to suggest that the constructs from the 2x2 achievement goal framework need to be incorporated in the SCMAM as mediating variables (Cury et al., 2006; Elliot, 1997). The 2x2 achievement goal framework is particularly relevant because it introduces a valence dimension (approach-avoidance) crossed with the original performance-mastery dimension. The approach component is focused on the positive possibility of demonstrating competence, whereas the avoidance component is focused on avoiding the negative possibility of demonstrating incompetence (Elliot & McGregor, 2001). It is proposed that the more precise approach-avoidance distinction may lead to significantly different outcomes that are difficult to interpret when the dimensions are collapsed into a dichotomous framework (Cury et al., 2006; Elliot, 1997). Research suggests that individuals endorsing incremental beliefs will be tend to adopt mastery-approach and mastery-avoidance goals, whereas individuals endorsing entity beliefs will tend to adopt performance-approach and performance-avoidance goals (Cury et al., 2006). As with implicit beliefs, individuals can adopt more than one goal at once and thus research tends to focus on the degree to which goals are adopted (Elliot & McGregor, 2001).

The 2x2 framework has received particular attention and support in the sporting domain. Notably, much of this support has been for the adaptive nature of mastery-approach goals. For example, mastery-approach goals are associated with positive outcomes in sport including enjoyment, effort, motivation, satisfaction, and performance, while being inversely associated with negative factors such as worry and amotivation (Conroy, Kaye, & Coatsworth, 2006; Morris & Kavussanu, 2009;

Puente-Díaz, 2012; Stevenson & Lochbaum, 2008). In contrast, performance-avoidance goals are linked with negative outcomes including reduced effort, decreased motivation, and poorer performance (Elliot, Cury, Fryer, & Huguet, 2006). However, there have been mixed results concerning the influence of performance-approach goals and mastery-avoidance goals on motivational outcomes. For example, performance-approach goals have been associated with positive outcomes such as intrinsic motivation in some studies, whereas they have been associated with negative outcomes such as cognitive anxiety in others (Conroy et al., 2006; Stenling et al., 2014; Wang et al., 2009). Additionally, mastery-avoidance goals have been associated with negative outcomes such as worry and reduced intrinsic motivation, whereas they have produced null results in other research (Conroy et al., 2006; Puente-Díaz, 2012). Although individuals often have a dominant achievement goal, these achievement goals can be contextually and temporally specific (Van Yperen, 2006). Therefore, the associations between achievement goals and enjoyment/intention to continue in youth sport may be different from the aforementioned research. Of the little evidence that exists in regards to enjoyment in youth sport, performance-approach and mastery-avoidance goals have typically failed to produce positive or negative associations (Morris & Kavussanu, 2009). Therefore, the current paper aims to further explore these relationships, as well as new relationships, by investigating the links between implicit beliefs, the four achievement goals, enjoyment, and intention to continue.

Given that the addition of the 2x2 framework to the SCMAM is relatively recent, there is a paucity of research examining the relationships proposed by this model. Research in the intelligence (Cury et al., 2006), physical activity (Stevenson & Lochbaum, 2008), and sporting (Stenling et al., 2014) domains has demonstrated

that mastery-approach and performance-avoidance goals play a key role. For example, mastery-approach goals have been found to mediate the positive associations between incremental beliefs and outcomes such as intrinsic motivation for an IQ test and autonomy for leisure time exercise, as well as the negative association with cognitive sport anxiety. Conversely, performance-avoidance goals mediated the negative relationships between entity beliefs and outcomes such as test performance and perceived leisure time exercise autonomy, as well as the positive relationship with cognitive sport anxiety. Interestingly, Stenling et al. (2014) also found performance-approach goals mediated the relationship between entity beliefs and cognitive anxiety for female athletes but not males. The present research would be the first to test these relationships in regards to enjoyment and intention to continue in youth sport.

It is important to note that much of the research utilizing implicit beliefs and the 2x2 framework incorporates perceived competence as another core factor in the model. The precise role of perceived competence in this model is unclear; it has been theorized that perceived competence moderates the effects of achievement goals on outcomes in some research, while it acts as an independent antecedent of achievement goals in other research (Cury et al., 2006; Dweck & Leggett, 1988). Both perspectives have received mixed results (Cury et al., 2006; Wang et al., 2009). Given this uncertainty, we do not believe that placing perceived competence in any of these roles is justified. Therefore, consistent with previous research in youth sport (Biddle, Wang, Kavussanu, et al., 2003), we have chosen to control for perceived competence in our analyses and focus on the remainder of the model and its implications for enjoyment and intention to continue in youth sport.

The aim of the current research is to explore the relationships between implicit beliefs, achievement goals, enjoyment and intention to continue in youth sport by utilizing the SCMAM with the 2x2 achievement goal modification. Given that enjoyment is a primary predictor of dropout, and that intentions often predict actual behaviours, exploring the possible antecedents and mechanisms by which enjoyment and intention to continue are influenced could provide valuable information regarding the high dropout rate in adolescent sport. Based on theory and past findings, it is hypothesized that: (a) incremental beliefs will be associated with greater levels of enjoyment and intention to continue; (b) entity beliefs will be associated with lower levels of enjoyment and less intention to continue; (c) incremental beliefs will lead to the adoption of mastery-based goals; (d) entity beliefs will lead to the adoption of performance-based goals; (e) the relationship between incremental beliefs and enjoyment/intention to continue will be mediated by mastery-approach goals; and, (f) the relationship between entity beliefs and enjoyment/intention to continue will be mediated by performance-avoidance goals.

4.2 Methods

4.2.1 Participants

Participants were 393 students from non-government high schools in the New South Wales region of Australia. Regular sport participants were those individuals who had participated in an organised sport at least once per week for at least three months or an entire sport season over the past year (Vella et al., 2015). Non-regular sport participants (n = 58) and cases with missing data (n = 8) were excluded from the study. The remaining 327 regular sport participants (77 males, 250 females) were between 11 and 15 years of age (M = 13.03, SD = .84). Regular participation in organized team sport was reported by 82.3% (n = 269) and regular participation in

organized individual sport was reported by 66.1% (n = 216). Twenty-five different main sports were reported, with the most common being soccer (n = 64, 19.6%), netball (n= 52, 15.9%), and dancing (n = 43, 13.1%). On average, participants had been participating in their main sport for 5.41 years (*SD* = 3.06) and trained 2.74 days (*SD* = 1.30) per week. Data were inspected for outliers and most variables approximated a normal distribution except for incremental beliefs and mastery-approach goals which were negatively skewed. This is a common issue in youth sport research as sport participants have been shown to be predominantly driven by incremental beliefs and mastery-approach goals (Stenling et al., 2014; Wang et al., 2009). The analytic approach used in this paper (described below) is also robust to violations of these assumptions.

4.2.2 Procedure

Ethics approval for the study was gained via the institutional research ethics committee. Schools were contacted and informed about the study. Participants were provided with a questionnaire booklet to be completed during a normal Physical Education lesson.

4.2.3 Measures

Implicit Beliefs. Incremental and entity beliefs were assessed using the Conceptions of the Nature of Athletic Ability Questionnaire-Version 2 (CNAAQ-2; Biddle, Wang, Chatzisarantis, et al., 2003). The questionnaire consists of 12 items reflecting four subscales. Incremental beliefs were assessed by summing the Learning subscale (e.g., 'You need to learn and to work hard to be good at sport') and the Improvement subscale (e.g., 'In sport, if you work hard at it you will always get better'). Entity beliefs were assessed by summing the Gift subscale (e.g., 'To be

good at sport you need to be naturally gifted') and the Stable subscale (e.g., 'It is difficult to change how good you are at sport'). Participants responded on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This scale has been shown to produce valid and reliable estimates of incremental and entity beliefs in youth populations (Biddle, Wang, Chatzisarantis, et al., 2003). Cronbach's alpha for the four subscales ranged from .50 - .78.

Achievement Goals. The Achievement Goals Questionnaire for Sport (AGQ-S; Conroy, Elliot, & Hofer, 2003) was used to assess achievement goals. The questionnaire consists of 12 items assessing performance-approach goals (e.g. 'It is important for me to perform better than others'), performance-avoidance goals (e.g. 'I just want to avoid performing worse than others'), mastery-approach goals (e.g. 'I want to perform as well as it is possible for me to perform'), and mastery-avoidance goals (e.g. 'I worry that I may not perform as well as I possibly can'). Participants indicated how much they agreed or disagreed with each item with respect to their main sport. Items were rated on a seven-point scale ranging from 1 (*not at all like me*) to 7 (*completely like me*). The scale has demonstrated good reliability and validity in the youth sport context (Conroy et al., 2003). In the current study, the Cronbach's alpha coefficients for the four subscales ranged from .71 - .83.

Enjoyment. Enjoyment was assessed using the Enjoyment subscale of the Sport Commitment Model (SCM; Scanlan, Simons, et al., 1993). The subscale consists of four items (e.g., 'Do you have fun playing your main sport?') rated on a five-point scale ranging from 1 (*not at all*) to 5 (*very much*). The four items were summed to compute a total score. Previous research has supported the validity and reliability of this measure in similar populations (Kalaja, Jaakkola, Liukkonen, & Watt, 2010). In the present study the Cronbach's alpha coefficient was $\alpha = .97$.

Intention to continue. Intention to continue was assessed using one item developed for this study ('I intend to participate in my main sport next season'). The item was rated on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Although a reliability estimate cannot be calculated in this case, single item measures have been shown to produce good reliability and predictive validity, as well as being useful to reduce respondent burden (Bergkvist, 2015; Richard & Donnellan, 2012).

Covariates. A number of covariates were included in the analyses. Firstly, given the aforementioned uncertainty surrounding the role of perceived competence in the different versions of the social cognitive model of achievement motivation, perceived competence was controlled for to reduce the potential for residual confounding. This was done using the Athletic Competence subscale of Harter's (1985) Self-Perception Profile for Children (α = .78). The remaining covariates are predominantly related to social support in youth sport. This is because the three key social figures (parents, coaches, and peers) have been shown to be salient predictors of sport participation and related outcomes (Crane & Temple, 2015; McCarthy & Jones, 2007). In addition, there is some evidence to suggest that social agents shape implicit beliefs and therefore may potentially be confounding factors (Slater, Spray, & Smith, 2012). The Perceived Parental Support Scale (Van Yperen, 1995) was used to assess perceived parental support (α = .78); the Sport Friendship Quality Scale (Weiss & Smith, 1999) was used to assess perceived friendship quality in sport (α = .90); the Social subscale of the Self-Perception Profile for Children (Harter, 1985) was used to assess peer acceptance (α = .82); and, the direct version of the Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was used to assess perceived coach-athlete relationship quality. As suggested by previous

research (Lafrenière et al., 2011), the subscales of the CART-Q were combined to produce an overall measure of coach-athlete relationship quality which resulted in a Cronbach's alpha coefficient of $\alpha = .94$. Participants' age and sex were also included and controlled for in the analyses.

4.2.4 Design/Statistical Analysis

All analyses were conducted using Mplus version 7 (Muthén & Muthén, 1998-2012). Correlations were first examined to assess the bivariate relationships between variables. Linear regression models were then tested to examine the total effects (i.e., the *c* paths) linking incremental and entity beliefs with levels of enjoyment and intention to continue. These regression models controlled for age, sex, level of perceived competence, perceived parental support, perceived friendship quality, peer acceptance, and the coach-athlete relationship quality. Two multiple mediation path models were then tested to examine the direct effects (*c′* paths) and indirect effects (*ab* paths) linking incremental and entity beliefs with enjoyment via achievement goals (separate indirect paths were examined for each of the four achievement goals). These models controlled for age, sex, level of perceived competence, perceived parental support, perceived friendship quality, peer acceptance, and the coach-athlete relationship quality. A bootstrapping procedure with 5000 resamples was used to test the indirect effects with significance determined from 95% confidence intervals. The multiple mediation path models were then tested again, with intention to continue modelled as the dependent variable. Results are reported in terms of unstandardized (*B*) regression coefficients, with the statistical significance of the indirect paths determined on the basis of 95% confidence intervals.

4.3 Results

4.3.1 Descriptive Statistics and Correlations

The descriptive statistics for implicit beliefs, the 2x2 achievement goals, enjoyment, and intention to continue are presented in Table 4.1. Participants tended to endorse higher levels of incremental beliefs than entity beliefs. Participants also had high levels of mastery-approach goals, enjoyment, and intention to continue. Incremental beliefs demonstrated significant positive correlations with the two mastery goals, performance-approach goals, enjoyment, and intention to continue. Entity beliefs were positively correlated with the two performance goals and mastery-avoidance goals, whereas they were negatively correlated with mastery-approach goals, enjoyment, and intention to continue.

Table 4.1

Descriptive Statistics and Correlations

	M	*SD*	1	2	3	4	5	6	7
1. Incremental Beliefs	4.23	2.87	-						
2. Entity Beliefs	2.26	3.87	-.19**	-					
3. Mastery-Approach	4.34	1.75	.45**	-.15**	-				
4. Mastery-Avoidance	3.52	2.60	.16**	.16**	.31**	-			
5. Performance-Approach	3.06	2.84	.15**	.23**	.26**	.32**	-		
6. Performance-Avoidance	3.06	2.79	.01	.31**	.07	.37**	.59**	-	
7. Enjoyment	4.64	2.66	.22**	-.24**	.40**	.07	.05	-.14*	-
8. Intention to Continue	4.52	.82	.21**	-.22**	.41**	.15**	.12*	-.01	.56**

Note. *p<.05, **p<.01

4.3.2 Models Linking Implicit Beliefs with Enjoyment

Incremental beliefs and enjoyment. The multiple mediation path model linking incremental beliefs with enjoyment through the 2x2 achievement goals is shown in Figure 4.1. Incremental beliefs were found to be positively associated with mastery-approach goals, mastery-avoidance goals, and performance-approach goals. However, only mastery-approach goals and performance-avoidance goals were significantly related to enjoyment levels. The total and direct effects linking incremental beliefs with enjoyment were not significant. Further, the indirect paths linking incremental beliefs with enjoyment indicated that mastery-avoidance goals, *B* = .02, 95% CI [-.001, .05]; performance-approach goals, *B* = .01 [-.001, .04]; and, performance-avoidance goals, *B* = -.01, [-.04, .01]; were not significant. However, incremental beliefs were indirectly associated with enjoyment via mastery-approach goals, *B* = .05, [.02, .10].

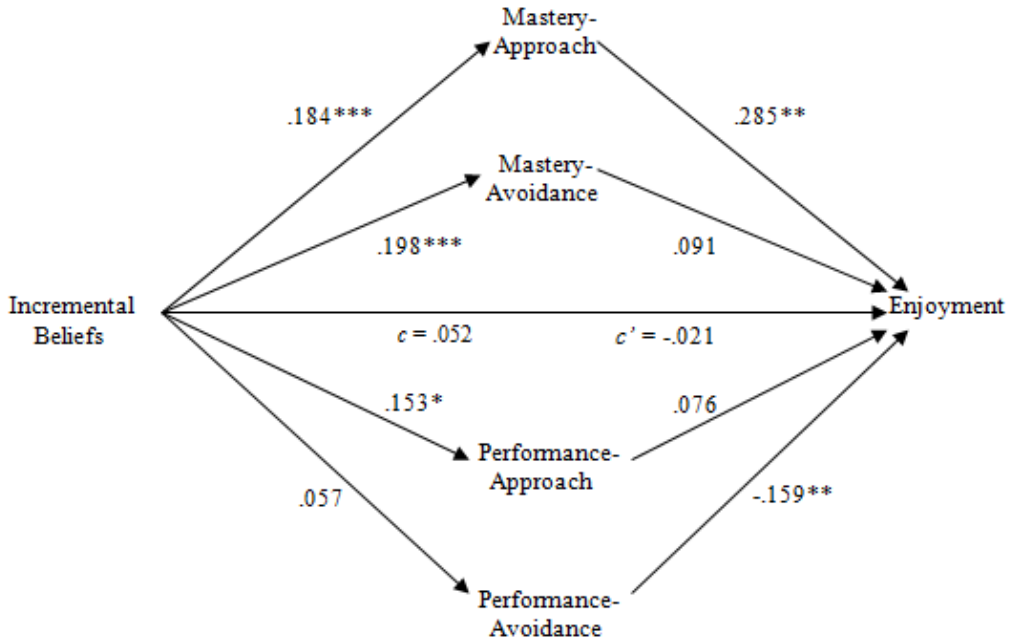

Figure 4.1. Multiple mediation model showing the relationship between incremental beliefs and enjoyment through the 2x2 achievement goal orientations.
Unstandardised B are presented for each path. *p <.05. **p <.01. ***p <.001.

Entity beliefs and enjoyment. The multiple mediation path model linking entity beliefs with enjoyment through the 2x2 achievement goals is illustrated in Figure 4.2. Entity beliefs were found to be positively associated with mastery-avoidance goals, performance-approach goals, and performance-avoidance goals. However, only mastery-approach goals and performance-avoidance goals were significantly related to enjoyment levels. The total and direct effects linking entity beliefs with enjoyment were not significant. The indirect paths linking entity beliefs with enjoyment via mastery-approach goals, *B* = .001 [-.01, .01]; mastery-avoidance goals, *B* = .01 [-.01, .03]; and, performance-approach goals, *B* = .02 [-.004, .05], were also not significant. However, entity beliefs were indirectly associated with enjoyment via performance-avoidance goals, *B* = -.03, [-.07, -.01].

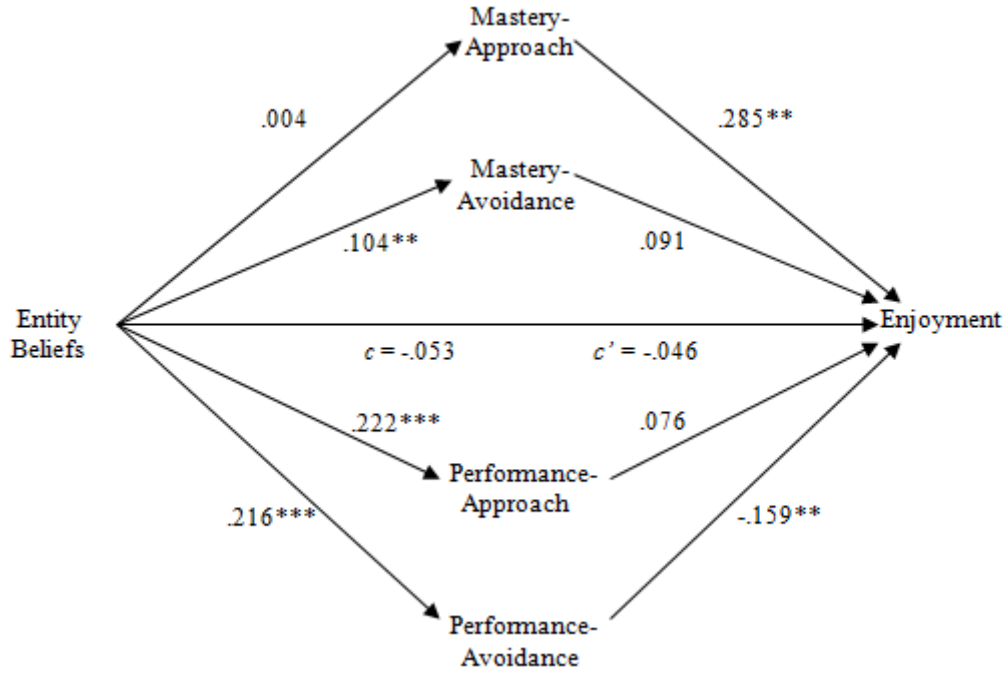

Figure 4.2. Multiple mediation model showing the relationship between entity beliefs and enjoyment through the 2x2 achievement goal orientations.
Unstandardised B are presented for each path. *p <.05. **p <.01. ***p <.001.

4.3.3 Models Linking Implicit Beliefs with Intention to Continue

Incremental beliefs and intention to continue. The multiple mediation path model linking incremental beliefs with intention to continue through the 2x2 achievement goals is illustrated in Figure 4.3. Incremental beliefs were found to be positively associated with mastery-approach goals, mastery-avoidance goals, and performance-approach goals. However, only mastery-approach goals were significantly related to intention to continue. The total and direct effects linking incremental beliefs with intention to continue were not significant. The indirect paths linking incremental beliefs with intention to continue via mastery-avoidance goals, *B* = .01 [-.002, .01]; performance-approach goals, *B* = .002 [-.003, .01]; and, performance-avoidance goals, *B* = .0003, [-.006, .001]; were also not significant. However, incremental beliefs were linked with intention to continue indirectly through mastery-approach goals, *B* = .02, [.01, .04].

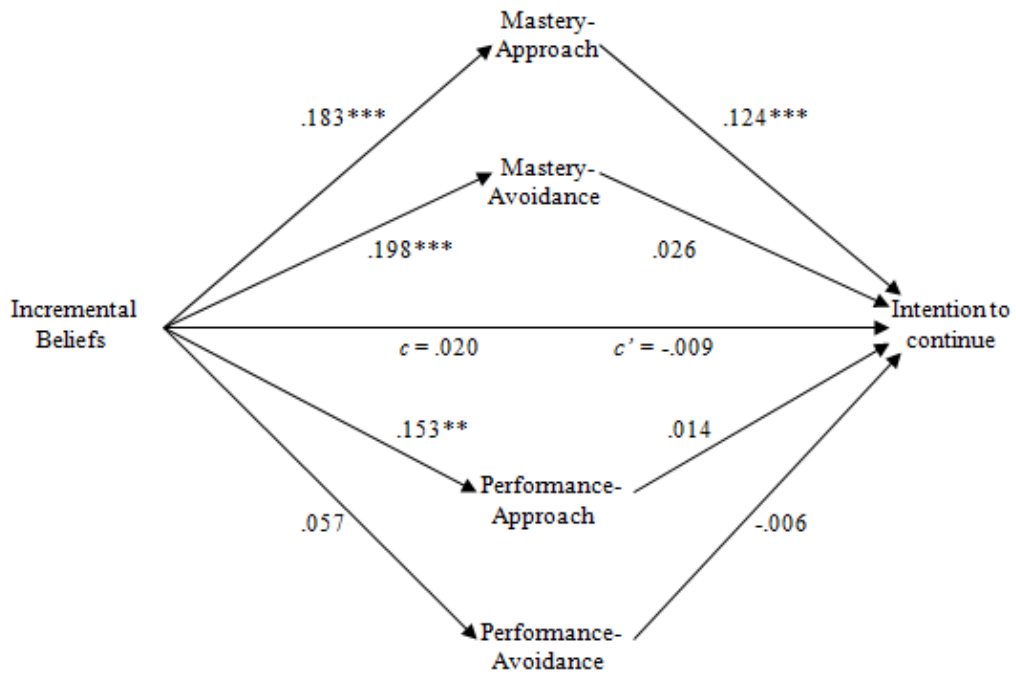

Figure 4.3. Multiple mediation model showing the relationship between incremental beliefs and intention to continue through the 2x2 achievement goal orientations. Unstandardised B are presented for each path. *p <.05. **p <.01. ***p <.001.

Entity beliefs and intention to continue. The multiple mediation path model linking entity beliefs with intention to continue through the 2x2 achievement goals is illustrated in Figure 4.4. Entity beliefs were found to be positively associated with mastery-avoidance goals, performance-approach goals, and performance-avoidance goals. However, only mastery-approach goals were significantly related to intention to continue. The total effect of entity beliefs on intention to continue was not significant, however, the association between entity beliefs and intention to continue while accounting for the 2x2 achievement goals (direct effect) was significant. The indirect paths linking entity beliefs with intention to continue via mastery-approach goals *B* = .001 [-.004, .01]; mastery-avoidance goals, *B* = .003 [-.001, .01]; performance-approach goals, *B* = .003 [-.01, .01]; and, performance-avoidance goals, *B* = -.001, [-.01, .01] were not significant.

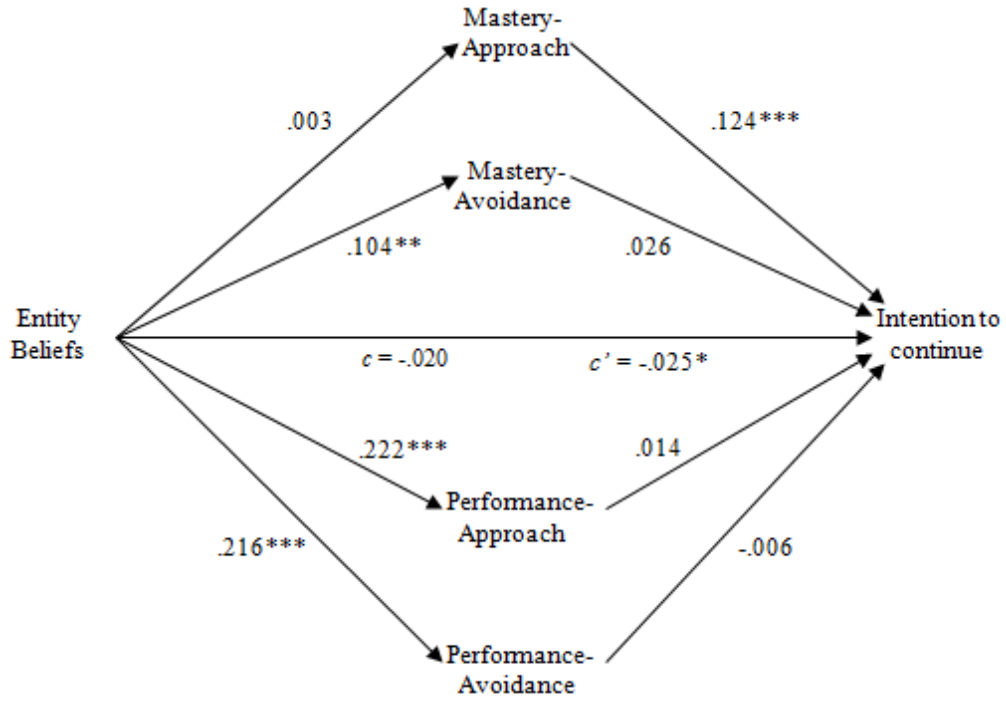

Figure 4.4. Multiple mediation model showing the relationship between entity beliefs and intention to continue through the 2x2 achievement goal orientations.
Unstandardised B are presented for each path. *p <.05. **p <.01. ***p <.001.

4.4 Discussion

This study indicated that implicit beliefs about ability and achievement goals are significantly associated with enjoyment and intentions to continue in youth sport. Individuals who believe their ability can be changed and developed (i.e., endorse high levels of incremental beliefs) experienced greater enjoyment and intention to continue in their sport due to their focus on demonstrating self-referenced mastery (mastery-approach goals). Although the sample tended to endorse high levels of incremental beliefs, mastery-approach goals, and experienced high levels of enjoyment and intention to continue, individuals who were relatively high on entity beliefs (i.e., believe their ability is stable and uncontrollable) experienced relatively less enjoyment due to their focus on avoiding demonstrating normative incompetence (i.e., performance-avoidance goals). In regards to intention to continue, individuals with relatively high levels of entity beliefs reported relatively less intention to continue regardless of their achievement goals. This provides new insights into the antecedents of enjoyment and intention to continue, and may therefore have important implications for understanding dropout behaviour in youth sport.

The findings that incremental beliefs were positively associated enjoyment and intention to continue, and entity beliefs were negatively associated with enjoyment and intention to continue were consistent with theoretical expectations. Similar findings in regards to incremental beliefs and enjoyment have been established in the physical activity domain (Biddle, Wang, Chatzisarantis, et al., 2003; Wang et al., 2003). However, there has been less evidence demonstrating the negative effect of entity beliefs on enjoyment and intention to continue. Although Wang et al. (2003) found that individuals high in entity beliefs enjoyed physical

activity/physical education classes significantly less than individuals high in incremental beliefs, the majority of the sample endorsing entity beliefs consisted of non-athletes. The link between entity beliefs and enjoyment may be particularly important as there is currently limited research examining non-enjoyment in youth sport which is the most commonly reported reason for dropout (Crane & Temple, 2015; McCarthy & Jones, 2007). The current research is the first to examine the relationships between entity beliefs and enjoyment/intention to continue among youth sport participants, and therefore adds to the existing knowledge in the area.

Also consistent with theory, incremental beliefs led to the adoption of mastery-approach and mastery-avoidance goals, whereas entity beliefs led to the adoption of performance-approach and performance-avoidance goals. However, the results demonstrated that incremental beliefs were also associated with performance-approach goals, and entity beliefs were also associated with mastery-avoidance goals. It is feasible that athletes who endorse incremental beliefs may still aim to demonstrate competence, despite it being in comparison to others (i.e., adopt a performance-approach goal), as they may not fear failure and/or they may perceive success as a likely outcome due to their malleable ability. Alternatively, these individuals may use normative comparisons as an indication of self-improvement or learning. It is also possible that individuals who endorse entity beliefs may aim to avoid demonstrating incompetence, despite it being self-referenced (i.e., adopt a mastery-avoidance goal), as they may perceive their fixed level of ability to be insufficient for the task. However, as demonstrated in the literature and the current findings, the most consistent and strong links have been between incremental beliefs and mastery-approach goals, and entity beliefs and performance-avoidance goals (Stenling et al., 2014; Stevenson & Lochbaum, 2008).

The findings that incremental beliefs were associated with enjoyment and intention to continue indirectly through mastery-approach goals and that entity beliefs were associated with enjoyment indirectly through performance-avoidance goals are consistent with previous research examining outcomes such as motivation for an IQ task, test performance, autonomy for leisure time exercise, and cognitive anxiety in athletes (Cury et al., 2006; Stenling et al., 2014; Stevenson & Lochbaum, 2008). However, neither mastery-avoidance goals nor performance-approach goals mediated the association between implicit beliefs and enjoyment levels or intention to continue. Given the equivocal findings surrounding these dimensions in the literature (Cury et al., 2006; Puente-Díaz, 2012; Stenling et al., 2014), no hypotheses about their role were made in the current paper. It is possible that the aversive focus of mastery-avoidance goals may undermine the increased enjoyment levels attributable to endorsing higher levels of incremental beliefs and being focused on self-referenced performance (i.e., mastery goals). This may be particularly salient in youth sport given that adolescence is a period often associated with social instability and adversity, and thus individuals may not want to risk embarrassing themselves in front of their peers (Fraser-Thomas et al., 2005; Stevenson & Lochbaum, 2008). In contrast, the lack of findings surrounding performance-approach goals may be due to the positive focus of the approach component being undermined by the negative influence of normative based evaluations of competence. Similarly, this issue may be prominent in youth sport as it is a competitive context where performance is easily and often evaluated (Stenling et al., 2014).

4.4.1 Theoretical and practical implications

The present findings provide important insights into the factors underlying enjoyment and intentions to continue in youth sport. Using the SCMAM as a

theoretical framework, we demonstrated that adaptive implicit beliefs and achievement goals facilitate enjoyment and intentions to continue. In contrast, maladaptive implicit beliefs and achievement goals inhibit enjoyment and intentions to continue. The 2x2 achievement goal framework appears to be a valuable addition to the SCMAM as the more precise dimensions demonstrated different associations with implicit beliefs and enjoyment/intentions to continue, and thus greater predictive power. These findings would have been lost if the approach-avoidance distinction was collapsed into the original dichotomous framework. This may at least partially explain previous mixed findings of studies utilizing AGT to explore the antecedents of enjoyment in regards to performance goals.

The novel findings concerning reduced enjoyment may be particularly important as research has tended to focus mainly on enjoyment and neglected investigating the antecedents of non-enjoyment. Although we consider the 2x2 achievement goal framework to be an improvement on the original dichotomous framework, the finding that only two of the achievement goals (mastery-approach and performance-avoidance) were significant in the mediation models may still be considered supportive of a dichotomous framework (Stevenson & Lochbaum, 2008). However, given that mastery-avoidance and performance-approach goals showed unexpected associations with entity beliefs and incremental beliefs respectively, the 2x2 achievement goal framework requires further investigation.

Given that lack of enjoyment is a primary factor in the decision to drop out of youth sport and that intentions are considered proximal predictors of actual behaviours, the current findings could have important practical implications. For example, as previous research has supported the notion that implicit beliefs can be adjusted (Spray et al., 2006), intervention strategies to promote enjoyment and

thereby prevent dropout may focus on the promotion of incremental beliefs among youth. This could be particularly important among adolescent sport participants as not only is it the period where dropout dramatically increases, but it is also the period when individuals' conceptions of ability become more differentiated (Balish et al., 2014; Nicholls & Miller, 1983). Prior to this, children tend to universally adopt incremental beliefs (Leondari & Gialamas, 2002). Vella, Cliff, Okely, et al. (2014) proposed a number of strategies for coaches to promote incremental beliefs among athletes such as defining success as effort, promoting learning, focusing on effort and persistence, facilitating challenge, providing high expectations, and promoting the value of failure. Furthermore, given that mastery-approach goals indirectly linked incremental beliefs with enjoyment, coaches and parents should avoid promoting comparison standards and instead encourage youth to strive to improve their personal development, learn skills, and have fun. This could be demonstrated at the organizational level by implementing youth sport programs that do not record game scores or competition points, a strategy already employed in junior Australian football (AFL) and soccer/football leagues in Australia.

4.4.2 Strengths and limitations

A theoretical concern that arose in the current study and other similar research is that participants tended to endorse incremental beliefs and adopt mastery-approach goals to a greater extent than entity beliefs and the other achievement goals (Stenling et al., 2014; Stevenson & Lochbaum, 2008). This issue may be especially common in the sport domain as sport participants are a population that has been shown to be predominantly driven by incremental beliefs and mastery-approach goals (Stenling et al., 2014; Wang et al., 2009). Similarly, the sample reported high levels of enjoyment and intention to continue which may produce ceiling effects.

However, this was to be expected given the sample consists only of regular sport participants. Although the conclusions are discussed in relative terms, rather than absolute terms, caution must be used as individuals experiencing relatively low levels of enjoyment and intention to continue still exhibited scores greater than the midpoint of the scales. Future research may benefit from including participants that have recently dropped out of sport. Additionally, perceived competence was controlled for in the analyses, but we did not examine whether it acted as a moderator or a direct antecedent in the model. This reflects the continuing uncertainty about the role of perceived competence in youth sport research (Cury et al., 2006; Wang et al., 2009). Future research is needed to investigate the specific role of perceived competence in relation to implicit beliefs and achievement goals.

There are also some methodological limitations that warrant discussion. The cross-sectional design of the study does not allow causation to be determined. Therefore, we cannot rule out other possible explanations and directional relationships. For example, it might be possible that high enjoyment of a sport could shape one's achievement goals. Future research using longitudinal and experimental designs is needed to explore the temporal associations between variables. Future research might also benefit from including measures of achievement goal orientations, which differ slightly from achievement goals. Achievement goal orientations reflect the general disposition to pursue mastery or performance goals, as compared to achievement goal involvement which refers to the more concrete purpose or focus of the behaviour (Elliot, 1997; Maehr, 1989). Therefore, achievement goal orientations share similar characteristics with implicit beliefs. Also like implicit beliefs, achievement goal orientations tend to be more stable than achievement goals (Conroy & Hyde, 2014). Therefore, results may vary from those

explored in the current research and other relationships, such as those between implicit beliefs and achievement goal orientations may become evident. Another limitation is use of self-report questionnaires which may be subject to socially desirable responses (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although the reliability and validity of single-item measures has been supported in previous research, the use of only one item to measure intention to continue could be a potential limitation, and multi-item scales should be considered in future research. Future research should also include measures of both sport-specific and sport-general dropout. Finally, all participants were recruited from private high schools and thus were of a medium to high socioeconomic position. Given that socio-ecological factors such as household income and parental education have been shown to predict dropout (Vella, Cliff, & Okely, 2014), future studies should also include participants from lower socio-economic positions. However, the inclusion of measures of parental, peer, and coach relationship as covariates in the analyses was a novel approach that significantly strengthened the current research.

4.4.3 Conclusion

This paper has provided support for the use of the SCMAM and the 2x2 achievement goal modification to understand enjoyment and intention to continue in youth sport. The findings imply that adaptive implicit beliefs and achievement goals may facilitate enjoyment and intention to continue, whereas maladaptive implicit beliefs and achievement goals may inhibit enjoyment and intention to continue. Specifically, individuals who believe that ability is malleable and increasable through effort (i.e., individuals high in incremental beliefs) experience greater levels of enjoyment and express more intention to continue, perhaps due to their focus on demonstrating self-referenced mastery (i.e., mastery-approach goals). In contrast,

although less prominent, individuals endorsing relatively higher levels of entity beliefs (i.e., individuals who believe that ability is fixed) experience relatively less enjoyment and intention to continue, perhaps because of their focus on avoiding normative displays of incompetence (i.e., performance-avoidance goals). These findings provide new insights into the antecedents of enjoyment and intention to continue in youth sport. Given that lack of enjoyment has been identified as the most common reason for dropout (Crane & Temple, 2015) and that intentions have been shown to be proximal predictors of sport participation (Balish et al., 2014; Prins et al., 2010), these findings could have important implications for promoting retention in youth sport. Sport organizations, coaches, and parents should avoid promoting comparison standards among youth athletes and instead work to establish environments that foster incremental beliefs, mastery-approach goals, and enjoyment.

Chapter 5: Social Climate Profiles in Adolescent Sports: Associations with Enjoyment and Intention to Continue

The following research has been published in the *Journal of Adolescence*.

5.1 Introduction

Understanding how aspects of the social climate – defined by the influence of key social figures (namely parents, coaches, and peers) – influence sport participation is valuable given that sport participation during childhood and adolescence has consistently been linked with positive health outcomes (Eime et al., 2013; Ntoumanis & Biddle, 1999). For example, sport participation has been linked with a range of positive physical and psychosocial health outcomes including reduced rates of overweight and obesity, improved social skills, resilience, greater self-esteem, improved emotional regulation, fewer mental health problems, and less problem behaviours (Eime et al., 2013; Hebert, Møller, Andersen, & Wedderkopp, 2015; Janssen & Leblanc, 2010). Notably, the psychosocial health benefits associated with sport participation surpass those attributable to unstructured physical activity alone (Eime et al., 2013; Vella et al., 2015). Additionally, research shows that sport participants experience less psychological difficulties and greater health-related quality of life compared to individuals who drop out or do not participate in sport (Vella, Cliff, Magee, et al., 2014; Vella et al., 2015). The purpose of the current study is to investigate how individual differences in perceptions of key social relationships are associated with youth sport participation.

5.1.1 The Social Climate and Adolescent Sport

Parents represent a key component of the social climate as they play a vital role in early sport participation where they are responsible for introducing children to

their chosen sport and providing ongoing support (Côté, 1999; Fredricks & Eccles, 2005). Parental support can include tangible support (e.g., financial costs and transport), socio-emotional support (e.g., encouragement and aiding understanding), informational support (e.g., explaining the rules), and companionship (e.g., watching sports events) (Côté, 1999; Côté & Hay, 2002). Parental support has been linked with a range of important psychological and behavioural outcomes in youth sport. For example, children who perceive their parents to be more supportive tend to experience greater enjoyment, intrinsic motivation, and are more likely to continue participating in sport (Atkins et al., 2013; Sheridan, Coffee, & Lavallee, 2014). However, parents can also have negative influences. For example, parental pressure is one of the most common interpersonal reasons for youth sport dropout (Crane & Temple, 2015). Therefore, gaining an understanding of perceptions of parental support could provide valuable information in regards to adolescent sport participation and dropout.

Coaches are often considered to play a similar role to parents given their position of authority and responsibility to provide support. However, the role of a coach is different as they are also relied upon for technical instruction to aid skill development (Côté & Gilbert, 2009; Keegan et al., 2010). Positive coach-athlete relationships represent a key component of the social climate because they have been linked with a number of motivational outcomes including increased motivation and greater persistence in youth sport (Gould et al., 2007; Riley & Smith, 2011). High quality coach-athlete relationships are characterized by high perceptions of closeness (e.g., feelings such as respect, trust, and appreciation), commitment (e.g., intentions to maintain the relationship), complementarity (e.g., the cooperative and reciprocal behaviours), and co-orientation (e.g., perceptions about shared views and common

ground) (Jowett & Ntoumanis, 2004; Jowett & Poczwardowski, 2007). However, research suggests that the coach-athlete relationship is commonly implicated in the decision to withdraw from youth sport (Rottensteiner et al., 2015). Contributing factors may include coach conflict, a controlling and autocratic coaching style, lack of encouragement, and an overemphasis on winning (Gearity & Murray, 2011; Gould, 2007; Pelletier et al., 2001). It is therefore important to understand the role of coaches, and more specifically the coach-athlete relationship, in the context of youth sport participation and dropout.

Peers represent another core component of the social climate in the context of youth sport. The role of peers is very different to that of parents and coaches, and has received relatively less empirical attention (Keegan et al., 2009; Smith et al., 2006). The two main dimensions of peer relationships that tend to be targeted in youth sport research are peer acceptance and friendship quality (Smith et al., 2006). Peer acceptance refers to popularity and liking by the larger peer group, whereas friendship quality refers to having a close and reciprocated dyadic relationship (Bukowski & Hoza, 1989). From a developmental perspective, Sullivan (1953) argued that the two dimensions make distinct contributions yet they can also compensate for other relationship shortcomings. For example, it is theorized that a close and high quality friendship may buffer against the negative outcomes associated with low peer acceptance (Smith, 1999; Sullivan, 1953). Additionally, Ullrich-French and Smith (2006; 2009) found peer acceptance and friendship quality to be uniquely and positively associated with enjoyment and continuation in soccer. Therefore, given that these dimensions have distinct influences on motivational outcomes in youth sport, they both need to be considered (Smith, 1999; Ullrich-French & Smith, 2006). This may be particularly salient when the two facets of peer

relationships are functioning at different levels as they could have an interactive effect.

5.1.2 Key Motivational Outcomes in Youth Sport

Enjoyment and intention to continue are two key motivational processes that could influence participation and dropout in youth sport (Balish et al., 2014; Crane & Temple, 2015). Sport enjoyment refers to a positive emotional response acquired from the sports experience (Scanlan & Simons, 1992). Enjoyment has consistently been linked with continued participation, whereas lack of enjoyment is reported to be the single most common reason for dropout in youth sport (Crane & Temple, 2015; Gould, 2007). Intentions refer to an individual's motivation and plans for future behaviour (Ajzen, 1991), and have been shown to directly predict actual sport behaviours, including participation and dropout (Balish et al., 2014). Although a number of other factors may contribute to continued participation in youth sport, the consistent findings in the youth sport literature linking enjoyment and intention to continue with participation suggests that the two factors are particularly important to future sport participation behaviour (Balish et al., 2014; Crane & Temple, 2015). Furthermore, according to research using behavioural change theories such as the theory of planned behaviour, the self-determination theory, and achievement goal theory, both factors should be considered because enjoyment can be conceptualized as an antecedent of intention (Ajzen & Driver, 1992; Atkins et al., 2015; Quested et al., 2013). This suggests that enjoyment could have an indirect effect on sport participation through its influence on intentions to continue.

Although these theories suggest that components of the social climate could influence sport participation via their effects on the motivational processes outlined above, few studies have examined all three key figures in the social climate.

Available studies have tended to focus narrowly on the motivational climates created by parents, coaches, and peers (Atkins et al., 2015; Chan et al., 2012; Sarrazin et al., 2002). The motivational climate refers to the perception that social agents are promoting an environment for effort and learning (i.e., a task-involving climate) or emphasizing success in comparison to others (i.e., an ego-involving climate) (Ames, 1992). This research indicated task-involving motivational climates from parents, coaches, or peers are associated with greater enjoyment and in turn greater intention to continue. That is, perceiving parent, coach, and peer behaviours to be supportive and encouraging of effort and improvement, despite setbacks, resulted in greater levels of enjoyment and intention to continue in sport (Atkins et al., 2015).

However, the motivational climate is just one dimension contributing to perceptions of the social climate, and research may benefit from looking at other types of relationships comprising the wider social climate (Hall, Newland, Newton, Podlog, & Baucom, 2016). This is because other facets of relationships may be associated with youth sport participation independently. For example, studies investigating the coach created motivational climate tend to focus on coach behaviours, rather than the coach-athlete relationship, and although both factors share some of the explained variance in athlete outcomes, they have also been shown to make unique contributions (Rottensteiner et al., 2015; Vella et al., 2013). Given that factors such as parental support and the coach-athlete relationship have been shown to contribute to the formation of the motivational climate (Atkins et al., 2013; Olympiou et al., 2008), it might be expected that perceptions of parental support, coach-athlete relationship, friendship quality, and peer acceptance will influence outcomes in a similar fashion to motivational climates. However, the unique

differences in the types of relationships may yield some important and novel findings.

5.1.3 Social Climate Profiles

Along with a dearth of research investigating the perceived influence of the social climate in youth sport, previous research has not examined whether combinations of social relationships are related to motivational outcomes. Instead, existing studies have tended to examine the influence of parents, coaches, and peers on motivational outcomes independently. This overlooks the potential co-occurrence of relationships with parents, coaches, and peers, the nature of which could considerably vary between individuals and could have important implications for motivation in sport.

Although some studies have attempted to look at combinations of relationships in youth sport (e.g., Smith et al., 2006; Ullrich-French & Smith, 2006), these investigations only included elements of peer and/or parental relationships. Nevertheless, this research has shown that the effects of social relationships are not isolated and they can influence sport motivation in an additive and collective way (Ullrich-French & Smith, 2009). Additionally, different relationships may fulfil both similar and different developmental needs (Furman & Buhrmester, 1985), and examining combinations of relationships may provide more information about the relative influence of each social figure. For example, the aforementioned research by Ullrich-French and Smith (2006; 2009) found that high peer acceptance and friendship quality led to a high probability of continuation even when the quality of the mother relationship was low. However, a high quality mother relationship predicted continuation regardless of the levels of the peer relationships. This finding may suggest that parents and coaches remain the most significant social figures

during childhood and early adolescence, whereas peers become increasingly influential during later adolescence (15-18 years) (Chan et al., 2012). Furthermore, Smith et al. (2006) created peer relationship profiles which demonstrated that combinations of peer relationship perceptions are salient to motivation-related variables. For example, the greatest enjoyment was reported by individuals within the profile characterized by high peer acceptance and friendship quality with relatively low conflict, as well as those within the profile characterized by high friendship quality, peer acceptance, and conflict. In contrast, less enjoyment was reported by individuals within the profile characterized by relatively low levels of each variable, as well as the profile characterized by relatively low peer acceptance and conflict with average friendship quality. These findings suggest that relationships with social figures are complex and there is a need to further investigate how distinct profiles of social relationships are associated with sport participation.

5.1.4 Summary and Study Aims

The current research adopts a person-centred approach (using latent profile analysis) to investigate whether there are distinct social climate profiles reflecting the level of support and quality of relationships with parents, coaches, and peers. We then investigate whether these social climate profiles are associated with enjoyment and intention to continue.

It is hypothesized that there will be individual differences in the type and level of perceived social climates across multiple sources of relationships among adolescent sport participants, and that those individual differences will have implications for enjoyment and intention to continue. Specifically, we expect a profile characterized by more positive perceptions of relationships with parents, coaches, and peers will be associated with greater enjoyment and intention to

continue, whereas a profile characterized by less positive perceptions of relationships will be associated with lower enjoyment and less intention to continue. These associations are expected to occur in an additive and collective fashion. It is also hypothesized that certain social climate factors will interact with one another. For example, given the prominent role of parents and coaches in youth sport participation and enjoyment (Chan et al., 2012; Ullrich-French & Smith, 2009), profiles characterized by positive perceptions of parental support and/or coach-athlete relationship quality will be expected to experience high enjoyment and intention to continue even when friendship quality and peer acceptance are low. Additionally, given that a high quality friendship is theorized to negate the effects of low peer acceptance (Smith, 1999; Sullivan, 1953), a profile characterized by high friendship quality should be associated with enjoyment and intention to continue despite low levels of peer acceptance. Finally, given that enjoyment is theorized to precede intention, it is expected that the social climate profiles will be linked with intention to continue indirectly through enjoyment.

A number of variables that may confound the aforementioned relationships will be controlled for in the analyses. Firstly, age will be included because the influence of key social figures on motivational outcomes has been found to vary as sport participants progress through childhood and adolescence. For example, parents may be most influential during childhood whereas peers may become more important during later adolescence (Chan et al., 2012). Gender has also been linked with varying relationships. For example, it has been suggested that a high quality friendship may be more important for participation among females than it is for males (Smith et al., 2006). The number of years of participation will be included given that the importance of enjoyment for continued participation may vary based

on the stage of participation the individual is at. For example, enjoyment may be more important for continued participation during the initial years than it is after a number of years of participation when the individual is likely to have a greater investment in the sport (Côté et al., 2003). Lastly, the type of sport will be included given that team and individual sport have been related to different psychosocial outcomes and the influence of key social figures may be vary between them (Eime et al., 2013).

5.2 Method

5.2.1 Participants and Procedures

A total of 393 students (94 males, 299 females) from private high schools in the New South Wales region of Australia took part in the study. The 327 students who identified as regular sport participants (i.e., participated in organized sport one to three times per week for at least three months over the past year) were included in the study. Data were inspected for univariate outliers using boxplots which indicated the existence of outliers for each of the social variables (parental support, coach-athlete relationship quality, friendship quality, and peer acceptance). Data were also screened for multivariate outliers using Mahalanobis distance; however, none of the cases exceeded the critical value ($p < .001$). Following the removal of outliers, the remaining 313 regular sport participants (75 males, 238 females) ranged from 11 to 15 years of age, with a mean age of 13.03 years ($SD = .84$). The participants most commonly described their ethnic background as Oceanian (n = 85, 27.2%), Southern and Eastern European (n = 81, 25.9%), and North-West European (n = 45, 14.4%). One hundred and eighty-six participants (59%) reported their main sport to be a team sport, and 127 (41%) participants reported their main sport to be an individual sport. Of the 25 different sports that were reported, the most common team sports were

soccer (n = 62, 19.8%) and netball (n = 51, 16.3%), and the most common individual sports were dancing (n = 43, 13.7%) and swimming (n = 26, 8.3%). The participants indicated that they had been participating in their main sport for an average of 5.48 years (*SD* = 3.03), trained an average of 2.77 days per week (*SD* = 1.31), and were most commonly participating at the basic competition level (n = 171, 54%). The study was approved by the institutional research ethics committee. Participants completed questionnaires during their regular Physical Education lesson.

5.2.2 Measures

Enjoyment. The Enjoyment subscale from the Sport Commitment Model (SCM; Scanlan, Simons, et al., 1993) was used to assess enjoyment in sport. Four items (e.g., 'Do you like playing your main sport?') were rated on a five point scale ranging from 1 (*not at all*) to 5 (*very much*). Cronbach's alpha in the current study was α = .96, with similar levels reported in previous youth sport research (Atkins et al., 2015).

Intention to continue. To assess intention to continue, participants responded to one item ('I intend to participate in my main sport next season') which was rated on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Perceived Parental Support in Sport. The Perceived Parental Support Scale (PPSS; Van Yperen, 1995) was used to assess sport specific perceived parental support. The scale consists of four items (e.g., 'If I have a problem, my parents will help me') rated on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants were instructed to answer each item with respect to their main sport. The scale has demonstrated validity and reliability in the youth

sport context (Lafferty & Dorrell, 2006). In the present study the Cronbach's alpha coefficient was α = .78.

Perceived Friendship Quality in Sport. Perceived friendship quality in sport was assessed using the Sport Friendship Quality Scale (SFQS; Weiss & Smith, 1999). The scale consists of 22 items assessing six dimensions of friendships; self-esteem enhancement and supportiveness (e.g., 'My friend gives me a second chance to perform a skill'), loyalty and intimacy (e.g., 'My friend and I stick up for each other in sports'), things in common (e.g., 'My friend and I do similar things'), companionship and pleasant play (e.g., 'My friend and I spend time together'), conflict resolution (e.g., 'My friend and I make up easily when we have a fight'), and conflict (e.g., 'My friend and I fight'). Participants were instructed to think about their closest friend in their main team or sport and rated their responses on a five-point scale ranging from 1 (*not at all true*) to 5 (*really true*). Cronbach's alpha in the current study was α = .90.

Perceived Peer Acceptance in Sport. The Social subscale of the Self-Perception Profile for Children (Harter, 1985) was used to assess peer acceptance in sport. The scale consists of six items adapted to be specific to sport. Items were presented in a structured-alternative format (e.g. 'Some kids are popular in their team/sport but other kids are not very popular in their team/sport'). Participants were instructed to decide which statement is most like them with respect to their main sport, and then indicate whether the statement is 'really true for me' or 'sort of true for me'. In the present study the Cronbach's alpha coefficient was α = .82.

Coach-Athlete Relationship Quality. The Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was used to assess the participants' perceived quality of the coach-athlete relationship. The questionnaire

contains 11 items rated on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants were instructed to answer each item with respect to their coach in their main sport. The items tap into three subscales: Closeness (e.g., 'I trust my coach'), Commitment (e.g., 'I feel committed to my coach'), and Complementarity (e.g., 'When I am coached by my coach, I feel responsive to his/her efforts'). However, as in previous research where the three subscales have been shown to be highly related, a composite score of the three subscales was used to indicate an overall perception of the quality of the coach-athlete relationship (Adie & Jowett, 2010; Lafrenière et al., 2011). In the current study, the correlations between the three subscales ranged between .83 and .85. The CART-Q has demonstrated high levels of validity and reliability (Jowett & Ntoumanis, 2004). Cronbach's alpha in the current study was $\alpha = .94$.

Covariates. Participants' age, gender, number of years of participation, and type of sport were included as covariates in the analyses.

5.2.3 Design/Statistical Analysis

Descriptive statistics were produced using IBM SPSS statistics software (version 21). Given the different scales and number of items in each of the measures, scores for parental support, coach-athlete relationship quality, friendship quality, and peer acceptance were standardized into z-scores for ease of interpretation of the distinct profiles. A latent profile analysis (LPA) was performed using Mplus version 7 (Muthén & Muthén, 1998-2012) to identify distinct profiles of individuals based on individual differences in perceived relationships with parents, coaches, and peers. The optimal number of latent profiles was informed by several statistical criteria. The Akaike's Information Criteria (AIC), Bayesian Information Criteria (BIC), and sample-size adjusted BIC were examined, with lower values indicating a better

model fit. Classification accuracy (entropy) and the size of the latent profiles were also considered. Although there are no clear cut-offs for entropy, values much lower than .80 should be treated with caution, since lower values indicate a lack of clear separation between two or more profiles (Celeux & Soromenho, 1996). Bootstrap likelihood ratio tests (BLRTs) were used to compare the fit between two consecutive models. A significant BLRT result indicates that the model with *k* profiles (e.g., four latent profiles) provides a better fit compared to a model with $k - 1$ profiles (e.g., three latent profiles). The ideal number of profiles is achieved when the BLRT is no longer significant; this indicates that the model with $k - 1$ latent profiles is considered optimal (Nylund, Asparouhov, & Muthen, 2007). In addition to the statistical criteria, the profiles were inspected to ensure they were meaningful, distinct, and not merely variations on a theme (Ram & Grimm, 2009). Age, gender, number of years of participation, and type of sport were included as covariates.

To assess whether the profile groups differed on levels of enjoyment and intentions to continue, two separate general linear models were analysed with Bonferroni corrected post-hoc pairwise comparisons. Age, gender, number of years of participation, and type of sport were controlled for in the analyses.

Finally, an indirect path model was tested to examine whether the social climate profiles were linked with intention to continue via enjoyment. The social climate profiles were dummy coded with the largest profile (the positive social climate profile) functioning as the reference category. Therefore, the direct (c' paths) and indirect effects (*ab* paths) are considered relative to this group (Hayes & Preacher, 2014). The direct effect refers to the association between the dependent variable (Y) and the independent variable (X) while accounting for the mediator (M). The indirect effect refers to the pathway from X to Y through M. A bootstrapping

procedure with 10,000 resamples was used to test the relative indirect effects with statistical significance determined on the basis of 95% confidence intervals. Results are reported in terms of standardized (β) regression coefficients. Age, gender, number of years of participation, and type of sport were specified as covariates on both M (enjoyment) and Y (intention to continue) (Hayes & Preacher, 2014).

5.3 Results

5.3.1 Descriptive Statistics

The descriptive statistics for the study variables are presented in Table 5.1. Participants perceived high levels of parental support, moderate-to-high coach-athlete relationship quality, high friendship quality, moderate-to-high peer acceptance, high enjoyment and high intention to continue. Bivariate Pearson's correlations revealed that all study variables were significantly and positively correlated.

Table 5.1

Descriptive Statistics and Correlations

	M	*SD*	Scale	1	2	3	4	5
1.Sport-Specific Parental Support	4.19	.62	1-5	-				
2.Coach-Athlete Relationship Quality	5.65	1.01	1-7	.35**	-			
3.Friendship Quality in Sport	4.09	.57	1-5	.35**	.41**	-		
4. Peer Acceptance in Sport	2.99	.60	1-4	.15**	.35**	.30**	-	
5. Enjoyment	4.67	.60	1-5	.25**	.47**	.24**	.28**	-
6. Intention to Continue	4.56	.79	1-5	.18**	.33**	.17**	.16**	.50**

Note. *p<.05, **p<.01

5.3.2 Latent Profile Analyses

The results of the LPA are presented in Table 5.2. The four profile model provided a better model fit compared with the preceding models. The five profile model had a statistically improved model fit according to the AIC and sample-size adjusted BIC; however, the BLRT results indicated that the difference between the model with five profiles and the model with four profiles was not significant. Additionally, the four profile model represented a more conceptually sound and parsimonious solution than the five profile model which separated one distinct profile into two overlapping profiles, one of which had a very small sample size. Therefore, the model with four latent profiles was considered optimal in this study. The average probabilities for most likely latent variable membership for the four profiles ranged between .83 and .91. These profiles are illustrated in Figure 5.1 and the means and standard deviations of social variables by profile are presented in Table 5.3. It is important to note that the sample reported high levels of parental support, coach-athlete relationship quality, friendship quality, and peer acceptance. Therefore, to facilitate the interpretation of the data, the constructs and labels are discussed in relative terms and they are not intended to represent the profiles in absolute terms. For example, the profile with the lowest score for parental support still exhibits a score greater than the midpoint of the perceived parental support scale; however, the profile has the lowest score relative to the other three profiles. We therefore consider this profile to be relatively low on parental support. This technique has been employed in previous studies as it is a common issue in youth sport research (Smith et al., 2006).

The most common profile (n = 141; 45.1%) was characterized by the highest levels of perceived parental support, coach-athlete relationship quality, friendship

quality, and peer acceptance. As a result, this profile was labelled *positive social climate.*

The second profile (n = 62; 19.8%) was characterized by relatively low levels of parental support, coach-athlete relationship quality, friendship quality, and peer acceptance. Therefore, this profile was labelled *diminished social climate.*

The third profile (n = 62; 19.8%) was characterized by relatively low levels of parental support and peer acceptance with the most distinguishing features being the relatively high levels of coach-athlete relationship quality and relatively low levels of friendship quality. Therefore, this profile was labelled *positive coach relationship quality.*

The fourth profile (n = 48; 15.3%) was characterized by relatively low levels of parental support and peer acceptance with the most distinguishing features being the relatively high levels of friendship quality and relatively low levels of coach-athlete relationship quality. This profile was therefore labelled *positive friendship quality.* Levels of parental support and peer acceptance did not differ significantly between the positive friendship quality profile and the positive coach relationship quality profile.

Table 5.2

Information Criteria and Model Fit Indices for 1 to 5 Latent Profiles

Profiles	AIC	BIC	Sample-size adjusted BIC	BLRT	Entropy
1	6278.02	6330.51	6286.11	-	-
2	3353.88	3413.82	3363.07	-1763.43 (p <.001)	.72
3	3341.92	3431.83	3355.71	-1660.94 (p <.001)	.74
4	3321.42	3441.29	3339.80	-1646.96 (p <.001)	.75
5	3313.08	3462.93	3336.06	-1628.71 (p = .111)	.79

Note. The four factor solution was retained

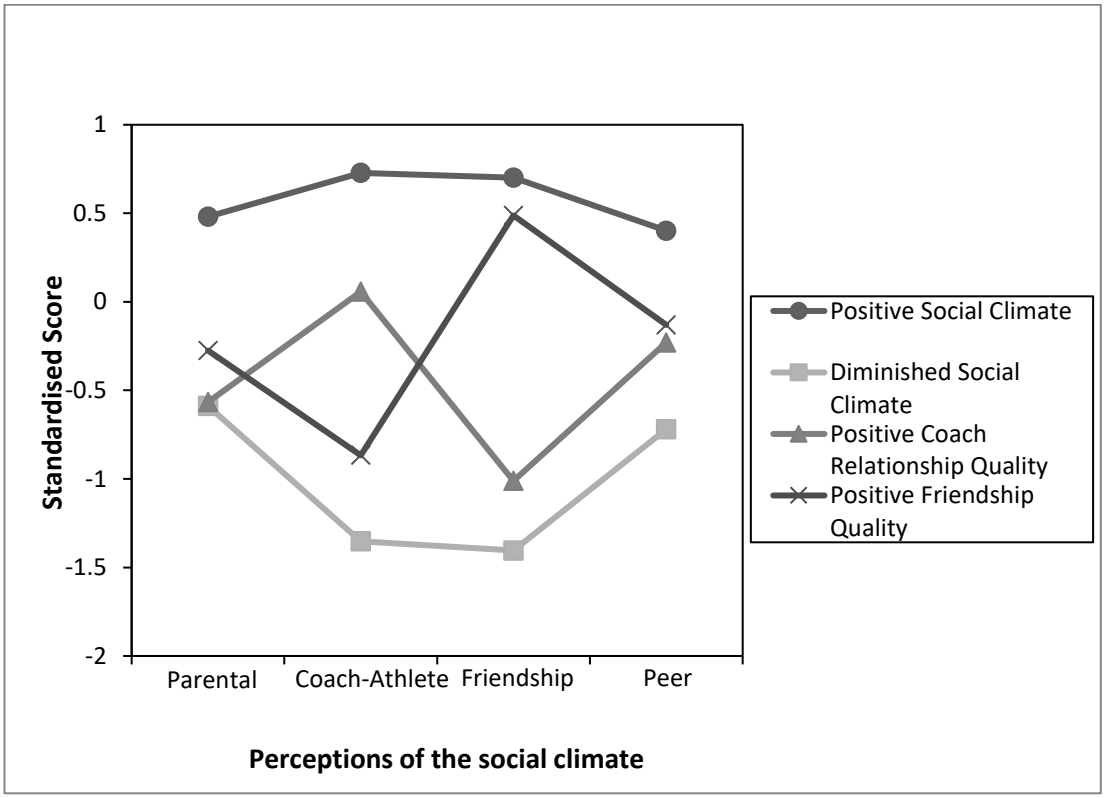

Figure 5.1. Social Climate Profiles: Z-scores for the positive social climate, diminished social climate, positive coach relationship quality, and positive friendship quality profiles.

Table 5.3

Means and Standard Deviations of Social Variables by Profile

	Positive Social Climate (n = 141)		Diminished Social Climate (n = 62)		Positive Coach Relationship Quality (n = 62)		Positive Friendship Quality (n = 48)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sport-Specific Parental Support	.48	1.05	-.59[a]	1.01	-.57[a]	1.51	-.27[a]	.91
Coach-Athlete Relationship Quality	.73	.49	-1.35	.60	.06	1.73	-.87	.40
Friendship Quality in Sport	.70[a]	.55	-1.40[b]	1.57	-1.01[b]	1.13	.49[a]	.58
Peer Acceptance in Sport	.40	.89	-.72[a]	.82	-.23[ab]	1.52	-.13[b]	.92

Note. Means in the same row which share the same superscript are not significantly different from each other (Bonferroni, $p<.05$)

5.3.3 Group Differences in Enjoyment and Intentions to Continue

The profiles differed significantly in terms of enjoyment, $F(3, 312) = 24.84$, $p < .001$, $\eta^2 = .19$, and intention to continue, $F(3, 312) = 10.64$, $p < .001$, $\eta^2 = .09$, when controlling for age, gender, number of years of participation, and type of sport. In regards to enjoyment, the Bonferroni corrected post-hoc pairwise comparisons showed that the positive social climate profile ($M = 19.60$, $SD = 1.14$) did not significantly differ from the positive coach relationship quality profile ($M = 19.23$, $SD = 1.41$). However, individuals in both the positive social climate profile and the positive coach relationship quality profile reported significantly more enjoyment than the positive friendship quality profile ($M = 17.44$, $SD = 3.29$) and the diminished social climate profile ($M = 17.16$, $SD = 3.20$). The positive friendship quality profile and the diminished social climate profile did not differ significantly from each other.

Similarly for intentions to continue, individuals in the positive social climate profile ($M = 4.79$, $SD = .57$) and the positive coach relationship quality profile ($M = 4.58$, $SD = .78$) reported significantly greater intention to continue than those in the diminished social climate profile ($M = 4.15$, $SD = .96$). However, only individuals in the positive social climate profile reported significantly greater intention to continue than those in the positive friendship quality profile ($M = 4.37$, $SD = .87$).

5.3.4 Indirect Path Analysis

The model linking the three social climate profiles with intention to continue through enjoyment, relative to the positive social climate profiles is shown in Figure 5.2. When controlling for age, gender, number of years of participation, and type of sport, the diminished social climate profile (a_1), the positive coach relationship quality profile (a_2), and the positive friendship quality profile (a_3) were associated with relatively less enjoyment than the positive social climate profile. However, only

the diminished social climate profile (c'_1) and the positive friendship quality profile (c'_3) had a significant direct effect on intention to continue. Enjoyment was positively associated with intention to continue (b_1). Compared to the positive social climate profile, the diminished social climate profile (a_1b_1), β = -.18, 95% CI [-.56, -.19], the positive coach relationship quality profile (a_2b_2), β = -.03, [-.13, -.005], and the positive friendship quality profile (a_3b_3), β = -.14, [-.50, -.18], were indirectly linked to lower intentions via lower levels of enjoyment.

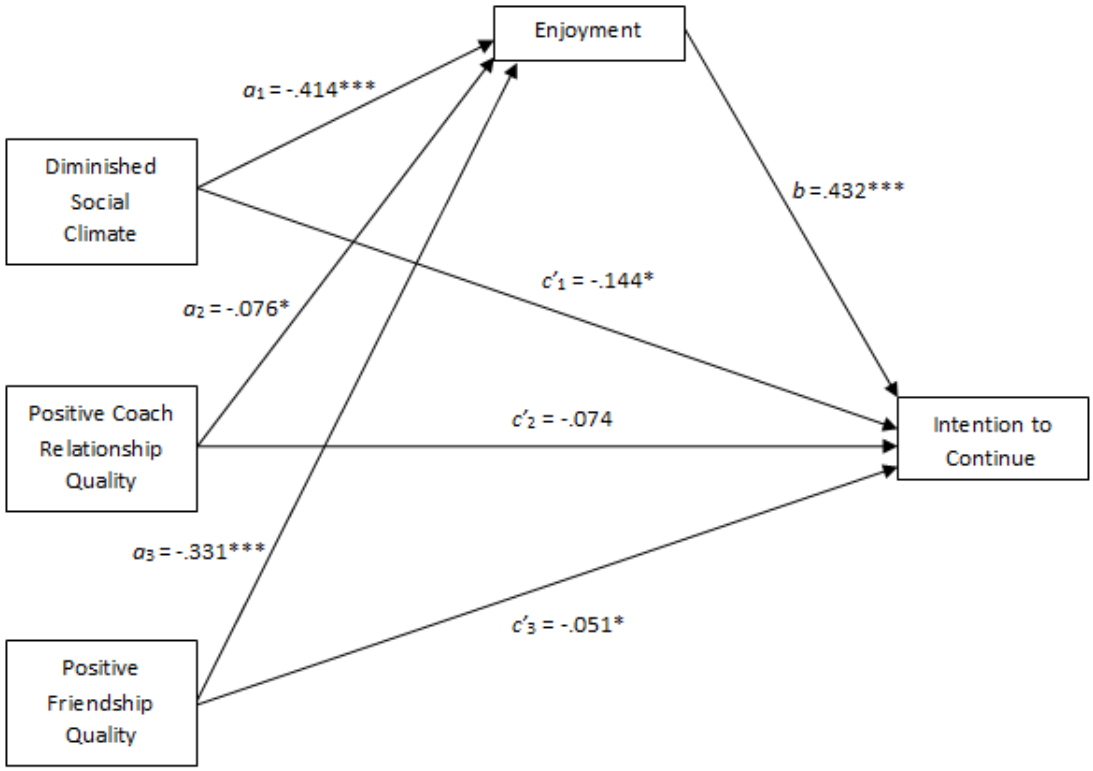

Figure 5.2. Model indirectly linking the three social climate profiles with intention to continue through enjoyment.
The positive social climate profile is the referent. The direct effect is represented by c′. Standardised β are presented for each path. *p <.05. **p <.01. ***p <.001.

5.4 Discussion

To our knowledge, the current study is the first to explore whether there are individual differences in the type and level of perceived social climates in adolescent sport based on relationships with parents, coaches, and peers. This is important given that the social climate has been strongly associated with children's involvement in youth sport, which in turn has been linked with a range of positive health outcomes (Eime et al., 2013). The LPA identified four distinct social climate profiles: positive social climate (45.1%); diminished social climate (19.8%); positive coach relationship quality (19.8%); and, positive friendship quality (15.3%). The study also sought to explore whether these profiles are associated with motivational outcomes including enjoyment and intention to continue in sport. Consistent with expectations, individuals characterized by a positive social climate profile reported the greatest enjoyment and intention to continue, whereas individuals characterized by a diminished social climate profile reported relatively less enjoyment and intention to continue. Interestingly, individuals in the positive coach relationship quality profile also reported relatively high levels of enjoyment and intention to continue, despite lower levels of parent and peer relationships; these findings may indicate that the coach plays a key role in adolescent sport participation. Finally, as expected, the social climate profiles were found to be indirectly linked with intentions to continue through enjoyment compared to the positive social climate profile.

Results support previous research demonstrating that more positive perceptions of relationships with parents, coaches, and peers are associated with greater enjoyment in youth sport (Sánchez-Miguel et al., 2013; Scanlan, Carpenter, Lobel, & Simons, 1993; Smith et al., 2006). This is also consistent with previous assertions that multiple positive social relationships will be associated with more

positive motivational outcomes (Ullrich-French & Smith, 2009). However, the finding that the highest levels of enjoyment were also observed in the positive coach relationship quality profile (characterized by relatively high levels of coach-athlete relationship quality coupled with relatively low levels of friendship quality), whereas relatively less enjoyment was observed in both the diminished social climate profile and the positive friendship quality profile (characterized by relatively high levels of friendship quality coupled with relatively low levels of friendship quality), suggests that the quality of the coach-athlete relationship may be of particular importance to enjoyment in youth sport. This is consistent with previous findings demonstrating that a positive coach-athlete relationship is associated with positive motivational outcomes in youth sport (Gould et al., 2007; Riley & Smith, 2011; Rottensteiner et al., 2015; Vella et al., 2013), and that coach support and satisfaction are stronger predictors of youth sport enjoyment than peer and parental support (Scanlan, Carpenter, Lobel, et al., 1993). Furthermore, within Henriksen, Stambulova, and Roessler's (2010) holistic ecological approach, the environment is structured in two levels: the micro-level, where the sport participant spends most of their time, and the macro-level, referring to the broader social setting and culture. Although parents, coaches, and peers all exist within the micro-level, coaches are considered to have a more direct link with the athlete than parents and peers.

The findings also suggest that perceived friendship quality, when coupled with relatively low levels of coach-athlete relationship quality, parental support, and peer acceptance, is of less importance to adolescent sport participants' enjoyment in this age group. This is counter to previous research emphasizing the role of positive peer relationships in sport enjoyment (Scanlan, Carpenter, Lobel, et al., 1993; Smith et al., 2006), and our hypothesis that friendship quality can buffer against the

negative effects of low peer acceptance (Sullivan, 1953). However, Sullivan's (1953) theory only considered the two aspects of peer relationships and it is possible that the lower levels of parental support and coach-athlete relationship quality may override the protective effect. Additionally, Chan et al. (2012) found that age moderated the association between social influences and motivational outcomes among a sample of 9 to 18 year old swimmers. Specifically, the role of peers was most important for enjoyment between the ages of 15 and 18 years, whereas coaches and parents were most important prior to this age. This suggests that the sport participants in the current research may still be most responsive to the influence of their coach and parents, as compared to their peers. However, the finding that parental support was not a salient variable in any of the profiles is in line with previous research suggesting that parents are most influential during the childhood years (Chan et al., 2012).

Additionally, the findings support the co-occurrence of social relationships but highlight that individuals can experience different combinations of relationships which may uniquely contribute to motivational outcomes in youth sport. Given that social figures may exert different influences, it is possible that some supportive social relationships compensate for a lack of support from other relationships. This is in line with previous developmental theory proposing a compensatory model of social relationships (Furman & Buhrmester, 1985). Therefore in the current study, although this did not occur in the positive friendship quality profile, the finding that the positive coach relationship quality profile maintained the greatest levels of enjoyment and intention to continue, despite poorer perceptions of parent and peer relationships, suggests that coach relationships serve a compensatory function in youth sport. This may be because coach relationships fulfil similar needs to that

which parents and peers do, and therefore act as an alternative source when those relationships are lacking (Wiese-Bjornstal, Lavoi, & Omli, 2009). For example, similar to parents, coaches are authority figures who can fulfil the adolescents' needs for socio-emotional and informational support (Côte & Hay, 2002; Keegan et al., 2010; Wiese-Bjornstal et al., 2009). Additionally, coaches can provide a close dyadic relationship in the sporting context which could be considered similar to the role of friendship quality in sport (Bukowski & Hoza, 1989; Wiese-Bjornstal et al., 2009). Therefore, the results may not be signifying that parental support and friendship quality are not important; rather, they may be highlighting the importance of the coach-athlete relationship which can act as a surrogate source of these relationships. A close friendship in sport alone may not be sufficient to address the needs usually fulfilled by parents and/or coaches for the positive friendship quality group.

To our knowledge, the current study is the first to examine the link between intentions to continue and the social climate based on perceptions of relationships with all three social figures. Given that intentions are considered to be closely linked with actual behaviours (Ajzen & Driver, 1992), the finding that less positive perceptions of relationships with parents, coaches, and peers are independently associated with less intention to continue is in line with previous dropout research (Balish et al., 2014; Crane & Temple, 2015). Although research investigating all three social figures simultaneously has looked specifically at motivational climates in relation to both enjoyment and intention to continue, none of the motivational climates were directly related to intention to continue. Instead, the task-involving motivational climates were indirectly associated with intention to continue through enjoyment (Atkins et al., 2015). The difference between the findings in regards to perceptions of the motivational climate and the direct perceptions of relationships in

the current study may highlight the importance of investigating other types of relationships contributing to the wider social climate. This is further evidenced by inconsistent findings regarding enjoyment where parent and/or peer created motivational climates were found to be more influential than coach created motivational climates (Atkins et al., 2015; Chan et al., 2012). Therefore, as in some previous research (e.g., Rottensteiner et al., 2015), future research might benefit from including both direct perceptions of relationships as well as motivational climates with all three social figures to examine their unique and relative influence on motivational outcomes in youth sport.

Similar to the findings on enjoyment, individuals in the positive friendship quality profile also reported relatively less intention to continue, whereas those in the positive social climate and positive coach relationship quality profiles reported high intention to continue. Again, this may be suggesting that the coach-athlete relationship is particularly important whilst deemphasizing the importance of perceived friendship quality, or highlighting the compensatory nature of social relationships. However, given that the positive coach relationship quality profile and the positive friendship quality profile did not differ significantly from one another, this notion appears more tenuous in regards to intentions to continue. This is an interesting finding given that enjoyment and intention to continue or drop out have consistently been linked in youth sport research (Atkins et al., 2015). It is possible that the use of a multi-item scale to measure enjoyment, as opposed to a single-item scale to assess intention to continue, produces a more reliable measure and allows for more distinguishable results (Nunnally, 1978). Additionally, there may be fundamental differences between the nature of intentions and enjoyment in this context. For example, according to the Theory of Planned Behaviour (Ajzen &

Driver, 1992), intentions are influenced by perceived social norms, perceived behavioural control, and attitudes toward the behaviour. In contrast, support from key social figures along with effort and mastery have been identified as the major sources of youth sport enjoyment (Scanlan, Carpenter, Lobel, et al., 1993). Therefore, the direct relationship between aspects of the social climate and enjoyment may have led to greater sensitivity to differences in the profiles, as compared to intention to continue. This is further supported by the finding that the social climate profiles were indirectly linked with intentions through enjoyment. Therefore, in line with previous behavioural change theories, the two outcomes can be ordered, with enjoyment preceding intentions (Atkins et al., 2015; Quested et al., 2013).

5.4.1 Practical Implications

The use of a person-centred approach to identify distinct profiles of individuals may enable researchers to identify individuals at risk of negative outcomes, such as dropout, and develop intervention strategies tailored to address their specific issues. For example, the finding that individuals who perceive a high quality coach-athlete relationship experienced the greatest enjoyment and intentions to continue, despite having relatively low levels of parental support, friendship quality, and peer acceptance, suggests that the coach-athlete relationship is of significant value. Therefore, researchers might target this relationship to potentially prevent outcomes including dropout. For example, coach education programs could be developed to teach coaches strategies and techniques that facilitate high quality relationships with athletes. These may include communication skills, team building activities, positive reinforcement and feedback, developing trust, goal setting, being

responsive and supportive, and how to appropriately discipline athletes (Camiré, Forneris, Trudel, & Bernard, 2011; Gould et al., 2007).

Although the present research suggests that the coach-athlete relationship may be of particular importance, relationships with parents and peers in youth sport should not be discounted. Findings demonstrated that distinct combinations of interpersonal relationships are associated with motivational outcomes in youth sport, and support the notion that some positive relationships can compensate for other less positive relationships (Furman & Buhrmester, 1985). It is therefore important that the collective influence of all three social figures be considered in future research to enable a more comprehensive understanding of the youth sport experience. Future research might also benefit from looking at more specific variables, such as relationships with mothers and fathers separately, or the influence of peers outside the sport context (i.e., perceived behavioural norm).

5.4.2 Limitations and Future Directions

A limitation of the current research is the cross-sectional nature of the data as it does not allow us to draw conclusions about causality or directionality. For example, we are unable to determine whether individuals experience greater enjoyment and intention to continue because of their high quality relationship with their coach, or whether it is because they enjoy the sport and want to continue participating that they actively seek out and build positive relationships with their coach. Future research should incorporate longitudinal designs to explore this, along with actual dropout behaviour.

Other limitations include the relatively small percentage of variance explained by the profiles and the entropy level in the latent profile analysis falling short of the recommended level of .80 (Celeux & Soromenho, 1996) which may

reflect issues of distinctiveness. However, the entropy value of .75 is not substantially lower than the recommendation and indicates fairly good separation between the profiles. Furthermore, other statistical criteria including the results of the BLRT and the average probabilities for most likely latent variable membership support the retained profiles. Research utilizing more detailed measures of social relationships may result in profiles that better distinguish between individuals. Additionally, the levels of enjoyment and intention to continue within the sample were not normally distributed. The sample reported high levels of both variables which indicates the existence of ceiling effects. This is a common issue in youth sport research given that individuals generally participate in their sport voluntarily so are expected to have high levels of motivation (Smith et al., 2006). Although the results and profiles are explained in relative terms, rather than absolute terms, when we consider the profiles with the lowest enjoyment and intention to continue, it is important to remember that they do not necessarily have low levels of enjoyment and intention to continue in absolute terms.

The current research also utilizes participants aged 11 to 15 years, which is a fairly wide age range in this context. For example, previous research revealed age effects during adolescence with the importance of parents, coaches, and peers varying as sport participants progress through childhood and adolescence (Chan et al., 2012). Future research with larger sample sizes would allow for specific age effects to be examined which could provide further insights into the links between social relationships and sport participation in children and adolescents. Another limitation is that participants were recruited from two private high schools and therefore are of relatively high socioeconomic status. This is important given that socioeconomic factors have been found to be predictors of sport participation and

dropout (Vella, Cliff, & Okely, 2014). This is reflected in the high percentage of participation reported within the sample. Therefore, the study should be replicated in a sample incorporating participants from a range of socioeconomic positions and from a greater number of schools which enables the use of a clustered design. Research should also consider other factors implicated in youth sport participation, such as parental pressure, as participation may not always be completely voluntary for youth sport participants (Friedman, 2013). Additionally, in line with Henriksen et al.'s (2010) athletic talent development environment model, it is important to consider broader factors in the macro-environment (e.g., club culture), as we only explored factors within the micro-environment. The sample was also skewed towards females. Future research should aim to include a more even spread of males and females, or investigate each gender separately. Nevertheless, key strengths of the study include the incorporation of all three social figures and the use of latent profile analysis which is an improvement on other previously used statistical techniques such as cluster analysis (Pastor, Barron, Miller, & Davis, 2007).

5.4.3 Conclusion

The results of this study revealed that individual differences in perceptions of the social climate, based on relationships with parents, coaches, and peers, exist and fall into distinct profiles which are associated with varying levels of enjoyment and intention to continue in sport. Additionally, the social climate profiles were linked with intention to continue indirectly through enjoyment. Results highlight the importance of investigating combinations of relationships with the three key social figures in youth sport. The findings suggest that the coach-athlete relationship may be of particular importance and may compensate for a lack of other supportive relationships in this age group. Findings could have important implications for

understanding youth sport participation and dropout, which in turn could aid in improving physical and psychosocial health outcomes among children and adolescents.

Chapter 6: The Role of Implicit Beliefs and Achievement Goals as Protective Factors in Youth Sport

The following research has been published in the *Journal of Applied Sport Psychology*.

6.1 Introduction

Organized sport is one of the most common types of leisure-time physical activity engaged in by youth worldwide and is particularly prominent within Australia where regular participation rates reach approximately 71-81% annually (Active Healthy Kids Australia, 2016; Tremblay et al., 2014). Given these large numbers, youth sport can be considered a valuable medium for improving physical and psychosocial health, as well as promoting positive youth development (Eime et al., 2013; Fraser-Thomas et al., 2005). However, after peaking around the ages of 9-11 years, participation rates decline rapidly which can have adverse consequences for adolescent health and development (Australian Sports Commission, 2016; Balish et al., 2014). For example, when compared to youth who regularly participate in sport, individuals who drop out of extra-curricular sport show decreased levels of health-related quality of life and have an increased risk of mental health problems (Vella, Cliff, Magee, et al., 2014; Vella et al., 2015). For this reason, research is increasingly focusing on identifying the factors contributing to dropout from organized sport during adolescence. The present research therefore focuses on adolescent sport participants.

Recent research investigating achievement motivation within the sport context has offered some support for a link with future sport participation behaviour (Gardner et al., 2017). This research indicates that implicit beliefs and achievement goals underlie youth sport participation. Implicit beliefs, originally proposed by

Dweck and Leggett (1988) within the social-cognitive model of achievement motivation (SCMAM), refer to an individuals' conceptions about the nature of their ability in a given context (e.g., sport). Individuals who believe their ability is malleable and can be developed through practice are said to endorse incremental beliefs, whereas individuals who believe their ability is fixed or innate are said to endorse entity beliefs.

Within the SCMAM, implicit beliefs are considered to be the antecedents of two achievement goals, known as mastery and performance goals, which in turn influence one's cognitive, affective, and behavioural response patterns (Dweck & Leggett, 1988). Incremental beliefs orient individuals towards mastery goals which are characterized by a focus on learning and self-referenced improvement. Entity beliefs orient individuals towards performance goals which are characterized by a focus on normative displays of competence (Dweck & Elliot, 1983). Research in a variety of achievement contexts has linked incremental beliefs and mastery goals with more adaptive response patterns (e.g., increased motivation, enjoyment, and persistence at challenging tasks), whereas entity beliefs and performance goals have tended to be associated with more maladaptive response patterns (Biddle, Wang, Chatzisarantis, et al., 2003; Dweck & Leggett, 1988).

More recently, Cury et al. (2006) proposed a revised version of the SCMAM (r-SCMAM) in response to mixed findings that linked performance goals with negative outcomes (e.g., reduced intrinsic motivation) in some studies and positive outcomes (e.g., enhanced intrinsic motivation) in other studies (Elliot, 1997). The r-SCMAM proposes that the initial dichotomous achievement goal framework be replaced with the 2x2 achievement goal framework. The 2x2 achievement goal framework builds on the previous mastery-performance goal distinction by

incorporating a further approach-avoidance distinction. Approach goals focus on the possibility of achieving or displaying competence, whereas avoidance goals focus on the potential demonstration of incompetence and the need to avoid it (Elliot & McGregor, 2001). Gardner et al. (2017) found some cross-sectional support for the utility of the added 2x2 framework in youth sport participation research, as their results indicated that incremental beliefs were associated with enjoyment and intention to continue indirectly through mastery-approach goals. In contrast, entity beliefs were associated with lower enjoyment indirectly through performance-avoidance goals.

Gardner, Vella, and Magee (2016) proposed further revisions to the previous SCMAM and r-SCMAM to specifically explore youth sport participation and dropout. Although similarly highlighting the role of implicit beliefs and achievement goals, this model incorporates the role of key social relationships. The push for the inclusion of key social figures is particularly important in this context given that multiple levels of factors (e.g., intrapersonal, interpersonal, institutional etc.) have been implicated in youth sport participation and dropout (Balish et al., 2014; Crane & Temple, 2015). It is proposed that perceptions of relationships with key social figures (e.g., coaches, parents, and peers) could moderate the effects of implicit beliefs and achievement goals on outcomes (Gardner, Vella, et al., 2016). Consideration of social figures is also consistent with calls in the implicit belief literature for potential moderators to be examined (Vella, Braithewaite, Gardner, & Spray, 2016). Although both implicit beliefs/achievement goals and key social factors have been independently associated with indicators of sport participation and dropout behaviour, research has not yet examined the potential interactive effects in this way (Gardner, Magee, et al., 2016; Gardner et al., 2017).

Coaches could be a particularly important social figure to consider in the context of youth sport. Positive coach-athlete relationships have consistently been linked with adaptive outcomes in sport, including sustained participation (Gardner, Magee, et al., 2016; Gould et al., 2007; Rottensteiner et al., 2015). According to Jowett's (2007) 3+1Cs model, high quality coach-athlete relationships are based on closeness (e.g., feelings of trust and mutual respect), complementarity (e.g., responsiveness and cooperation), commitment (e.g., planning to maintain a strong relationship), and co-orientation (e.g., shared views and mutual understanding). Although parents and peers also play an important role in youth sport participation, research suggests that coaches may be more strongly linked to enjoyment and may even compensate for other less supportive relationships (Gardner, Magee, et al., 2016; Scanlan, Carpenter, Lobel, et al., 1993). Moreover, there is experimental evidence that changes in coach behaviours can affect athlete outcomes such as self-esteem, enjoyment, and dropout (Eime et al., 2013; Langan, Blake, & Lonsdale, 2013). Although it has not yet been investigated, it is plausible that changes in the coach-athlete relationship over time moderate the relationship between implicit beliefs and outcomes.

The present research aims to explore the relationships among implicit beliefs, achievement goals, and perceived changes in the coach-athlete relationship over a one-year period. In line with previous research (e.g., Gardner et al., 2017), enjoyment will be used as an indicator of future sport participation behaviour given its identification as the most commonly reported reason for continued participation or dropout (Crane & Temple, 2015). Consistent with previous cross-sectional findings, it is hypothesized that incremental beliefs and mastery-approach goals will lead to greater enjoyment after one-year, whereas entity beliefs and performance-avoidance

goals will lead to lower enjoyment after one-year. Although previously unexplored, it is expected that changes in the coach-athlete relationship will predict enjoyment over the one-year period and moderate the relationships between implicit beliefs, achievement goals, and enjoyment. Specifically, improvements in the coach-athlete relationship are hypothesized to buffer the negative influence of maladaptive implicit beliefs and achievement goals (entity beliefs and performance-avoidance goals) on enjoyment. In contrast, a coach-athlete relationship that has deteriorated may weaken the positive effects of adaptive implicit beliefs and achievement goals (incremental beliefs and mastery-approach goals) on enjoyment. Given the varying role of perceived competence within both the SCMAM and the r-SCMAM, and consistent with previous research, perceived competence will be included as a covariate in all analyses (Gardner et al., 2017). Other potentially confounding factors that will be included as covariates include: age, sex, and perceptions of parental and peer relationships (Balish et al., 2014; Gardner, Vella, et al., 2016; Vella, Cliff, & Okely, 2014).

6.2 Method

6.2.1 Participants and Procedures

Participants in this study were recruited from two private high schools in Sydney, Australia. A total of 393 students (94 males, 299 females) were initially recruited and completed a written questionnaire during their regular Physical Education lesson at school. Of the 393 students, 327 students (77 males, 250 females; M_{age} = 13.03, SD = .84) reported regular participation in organized extracurricular sport and provided responses to a battery of questionnaires with respect to the sport they considered to be their main sport. These students were invited to participate in a follow-up questionnaire 12 months later, with data

collected from 273 sport participants (83.5% study retention rate) aged between 11 and 15 years (62 males, 211 females; M_{age} = 13.01, *SD* = .83) at baseline. Two hundred and forty-seven participants (90%; 54 males, 193 females) reported continued participation in their main sport, whereas 26 (10%; 8 males, 18 females) reported that they had dropped out of their main sport. Only participants who reported continued participation in their main sport, and thus completed all measures regarding the same sport at both time points, were included in the study. Approval for the study was gained via the institutional research ethics committee.

6.2.2 Measures

Implicit Beliefs. The Conceptions of the Nature of Athletic Ability Questionnaire-Version 2 (CNAAQ-2; Biddle, Wang, Chatzisarantis, et al., 2003) was used to measure implicit incremental and entity beliefs about athletic ability. The instrument includes 12 items, which are scored in relation to four subscales. Incremental beliefs were assessed through the Learning subscale (e.g., "You need to learn and to work hard to be good at sport") and the Improvement subscale (e.g., "How good you are at sport will always improve if you work at it"). Entity beliefs were assessed through the Stable subscale (e.g., "Even if you try, the level you reach in sport will change very little") and the Gift subscale (e.g., "To be good at sport you need to be naturally gifted"). Responses were given on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This questionnaire has been found to have adequate reliability and validity in youth populations (Biddle, Wang, Chatzisarantis, et al., 2003). In the current study, the Cronbach's alpha for the subscales ranged from .66 - .70.

Achievement Goals. Achievement goals were assessed using the Achievement Goals Questionnaire for Sport (AGQ-S; Conroy et al., 2003). The

instrument consists of 12 items assessing mastery-approach goals (e.g., “It is important to me to perform as well as I possibly can”), mastery-avoidance goals (e.g., “Sometimes I’m afraid that I may not perform as well as I’d like”), performance-approach goals (e.g., “My goal is to do better than most other performers”), and performance avoidance goals (e.g., “I just want to avoid performing worse than others”). Responses were given on a 7-point scale ranging from 1 (*not at all like me*) to 7 (*completely like me*). The psychometric properties have been supported in youth sport populations (Conroy et al., 2003). Cronbach’s alpha for the four subscales ranged from .70 - .84.

Coach-Athlete Relationship Quality. Perceived quality of the coach-athlete relationship was assessed using the Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004). The questionnaire consists of 11 items that are scored in relation to three subscales: Closeness (e.g., “I like my coach”), Commitment (e.g., “I feel committed to my coach”), and Complementarity (e.g., “When I am coached by my coach, I am ready to do my best”). Each item includes a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The subscales were summed to produce an overall coach-athlete relationship score. The scales validity and reliability has been demonstrated in the youth sport context (Jowett & Ntoumanis, 2004). Cronbach’s alpha in the current study was $\alpha = .93$ at Time 1 and $\alpha = .96$ at Time 2.

Enjoyment. Enjoyment in sport was measured using the Enjoyment subscale from the Sport Commitment Model (SCM; Scanlan, Simons, et al., 1993). The scale includes four items (e.g., “Do you have fun playing your main sport?”) rated on a five-point scale ranging from 1 (*not at all*) to 5 (*very much*). Cronbach’s alpha in the current study was $\alpha = .95$ at both Time 1 and Time 2.

Covariates. Variables controlled for in the analyses included participants' age, sex, perceptions of competence, and perceptions of parental support, friendship quality, and peer acceptance as identified in Gardner and colleagues' (2016) proposed motivational model. Perceived competence was assessed using the Athletic Competence subscale of Harter's (1985) Self-Perception Profile for Children (α = .76); parental support was assessed using Van Yperen's (1995) Perceived Parental Support Scale (α = .77); friendship quality in sport was assessed using Weiss and Smith's (1999) Sport Friendship Quality Scale (α = .90); and peer acceptance was assessed using the Social subscale from Harter's (1985) Self-Perception Profile for Children (α = .83).

6.2.3 Statistical Analysis

To assess change in the perceived quality of the coach-athlete relationship over the one year period, a raw change score was computed by deducting scores at Time 1 from scores at Time 2. Descriptive statistics and bivariate Pearson's correlations were calculated for each of the variables of interest. Linear regression was conducted to explore the link between change in perceived coach-athlete relationship quality and enjoyment at Time 2 after adjusting for enjoyment at Time 1.

The potential indirect effects of implicit beliefs (independent variables) on Time 2 enjoyment (dependent variable) through achievement goals (mediating variables), while controlling for enjoyment at Time 1, were tested using two separate models. First, the indirect path linking incremental beliefs at Time 1 on Time 2 enjoyment via the two mastery goals was tested controlling for Time 1 enjoyment, entity beliefs, performance-approach goals, performance-avoidance goals, age, sex, perceived competence, parental support, friendship quality, and peer acceptance. Second, the indirect path linking entity beliefs at Time 1 with Time 2 enjoyment via

the two performance goals was tested controlling for Time 1 enjoyment, incremental beliefs, mastery-approach goals, mastery-avoidance goals, perceived competence, parental support, friendship quality, and peer acceptance. Both models used a bootstrapping procedure with 5000 resamples to determine the significance of the indirect effects on the basis of 95% confidence intervals.

Conditional indirect effects were then examined to investigate whether the indirect paths linking Time 1 beliefs to Time 2 enjoyment via goals were moderated by changes in the coach-athlete relationship. Using the approach recommended by Hayes (2013), four conditional indirect path models were tested: incremental beliefs to change in enjoyment via mastery-approach goals; incremental beliefs to change in enjoyment via mastery-avoidance goals; entity beliefs to change in enjoyment via performance-approach goals; entity beliefs to change in enjoyment via performance-avoidance goals. Time 1 enjoyment, age, sex, perceived competence, parental support, friendship quality, peer acceptance, as well as the remaining implicit belief and achievement goals were controlled for in each of the models. A bootstrapping procedure with 5000 resamples was used to determine the significance of the conditional indirect effects on the basis of 95% confidence intervals at 3 levels of the moderator (1 standard deviation below the mean, the mean, and 1 standard deviation above the mean). All analyses were conducted using Mplus version 7 (Muthén & Muthén, 1998-2012).

6.3 Results

6.3.1 Descriptive Statistics

Descriptive statistics are illustrated in Table 6.1. Incremental beliefs and mastery-approach goals were positively correlated with enjoyment at both time points, whereas entity beliefs and performance-avoidance goals were negatively

correlated with enjoyment at both time points. On average, the sample reported a slight negative change in their perceptions of the coach-athlete relationship over the one-year period. Initial regression analyses indicated that changes in the perceived coach-athlete relationship predicted enjoyment at Time 2, $B = .10$, $p < .001$, after controlling for enjoyment at Time 1, age, sex, incremental beliefs, entity beliefs, mastery-approach goals, mastery-avoidance goals, performance-approach goals, performance-avoidance goals, perceived competence, parental support, friendship quality, and peer acceptance.

Table 6.1

Descriptive Statistics and Correlations

	1	2	3	4	5	6	7	8	9
1. Incremental Beliefs	-								
2. Entity Beliefs	-.05	-							
3. Mastery-Approach Goals	.40*	-.05	-						
4. Mastery-Avoidance Goals	.14*	.14*	.34**	-					
5. Performance-Approach Goals	.17*	.25**	.28**	.30**	-				
6. Performance-Avoidance Goals	.01	.32**	.04	.34**	.59**	-			
7. Enjoyment T1	.14*	-.14*	.31**	.04	.03	-.14*	-		
8. Enjoyment T2	.13*	-.14*	.31**	.04	.04	-.13*	.54**	-	
9. Coach-Athlete Relationship Change	-.06	.02	-.03	-.02	.01	-.05	-.09	.34**	-
M	4.27	2.21	4.38	3.55	3.07	3.01	4.75	4.49	-2.07
SD	.62	.50	.56	.84	.94	.93	.51	.76	12.93

Note. *p<.05, **p<.01

6.3.2 Indirect Effects Analyses

Incremental beliefs and mastery goals. The indirect models indicated that incremental beliefs were positively associated with mastery-approach goals, ($B = .15$, $p < .001$), and mastery-avoidance goals, ($B = .14$, $p = .01$) after controlling for the covariates listed above. However, neither mastery-approach goals, ($B = .27$, $p = .07$),

nor mastery-avoidance goals, (B = .01, p = .89), were significantly related to Time 2 enjoyment. The direct effect of incremental beliefs on enjoyment was not significant, (B = −.02, p = .81). Incremental beliefs were indirectly associated with Time 2 enjoyment through mastery-approach goals; however, the indirect path linking incremental beliefs with enjoyment through mastery-avoidance goals was not significant. The indirect effects are summarized in Table 6.2.

Entity beliefs and performance goals. Entity beliefs were positively associated with performance-approach goals, (B = .20, p < .001), and performance-avoidance goals, (B = .19, p < .001) after controlling for the covariates listed above. However, neither performance-approach goals, (B = .05, p = .50), nor performance-avoidance goals, (B = -.09, p = .15), were significantly related to Time 2 enjoyment. The direct effect of entity beliefs on enjoyment was not significant, (B = −.14, p = .72). The indirect paths linking entity beliefs with Time 2 enjoyment through performance-approach and performance-avoidance goals were not significant. The indirect effects are summarized in Table 6.2.

Table 6.2

Indirect Effects between Implicit Beliefs and Change in Enjoyment

	B	SE	95% CI
Incremental Beliefs to Enjoyment			
Mastery-Approach goals	.04*	.02	.001, .09
Mastery-Avoidance goals	.002	.01	-.02, .03
Entity Beliefs to Enjoyment			
Performance-Approach goals	.009	.01	-.02, .04
Performance-Avoidance goals	-.02	.01	-.05, .004

Note. *Significant as per 95% bias-corrected confidence intervals estimated through 5000 bootstrapped resamples.

6.3.3 Conditional Indirect Effects Analyses

Table 6.3 provides a summary of the conditional indirect effect results at low (one standard deviation below the mean; -15), average (the mean; -2.07), and high

(one standard deviation above the mean; 10.86) levels of the moderator for each model. After adjusting for enjoyment at Time 1, significant conditional indirect effects emerged in the model linking incremental beliefs with Time 2 enjoyment through mastery-approach goals. Changes in perceptions of the coach-athlete relationship significantly moderated the indirect effects at both one standard deviation below the mean and the mean. There was no significant conditional indirect effect at one standard deviation above the mean. Therefore, the indirect effect of mastery-approach goals in the relationship between incremental beliefs and enjoyment became stronger as the coach-athlete relationship deteriorated. There were no significant conditional indirect effects for any of the remaining models.

Table 6.3

Conditional Indirect Effects

	B	SE	95% CI
Incremental →Mastery-Approach →Enjoyment			
At low change in coach-athlete relationship	.06*	.03	.02, .14
At average change in coach-athlete relationship	.03*	.02	.004, .08
At high change in coach-athlete relationship	.003	.02	-.04, .05
Incremental →Mastery-Avoidance →Enjoyment			
At low change in coach-athlete relationship	.005	.01	-.01, .04
At average change in coach-athlete relationship	.001	.01	-.01, .02
At high change in coach-athlete relationship	-.004	.01	-.03, .004
Entity → Performance-Approach → Enjoyment			
At low change in coach-athlete relationship	.006	.01	-.01, .03
At average change in coach-athlete relationship	.001	.01	-.01, .02
At high change in coach-athlete relationship	-.003	.01	-.03, .01
Entity → Performance-Avoidance → Enjoyment			
At low change in coach-athlete relationship	-.003	.01	-.02, .01
At average change in coach-athlete relationship	-.004	.01	-.02, .003
At high change in coach-athlete relationship	-.005	.01	-.03, .01

Note. *Significant as per 95% bias-corrected confidence intervals estimated through 5000 bootstrapped resamples.

6.4 Discussion

This study examined whether implicit beliefs and achievement goals were related to enjoyment in youth sport over a one-year period, and whether changes in the perceived coach-athlete relationship moderated these relationships. In partial support of our hypotheses, incremental beliefs were indirectly related to greater enjoyment through mastery-approach goals. This suggests that the belief that ability can be increased and developed through practice, may be related to greater enjoyment due to a focus on demonstrating self-referenced mastery of skills. Perceived change in the quality of the coach athlete relationship predicted enjoyment at one-year follow up. However, the indirect effect of incremental beliefs on enjoyment through mastery-approach goals was only evident when the coach-athlete relationship was perceived to have deteriorated. This novel finding may reflect the protective value of adaptive implicit beliefs and achievement goals in the youth sport context. No other indirect or conditional indirect effects were found.

The finding that incremental beliefs were linked with greater enjoyment via mastery-approach goals is consistent with theoretical expectations (Cury et al., 2006). However, contrary to expectations, there was no indirect effect of performance-avoidance goals in the relationship between entity beliefs and enjoyment. Given that entity beliefs were expected to be associated with a reduction in enjoyment, this may be due to the sample reporting high levels of enjoyment at both time points. It may also reflect a common issue in youth sport research where the associations between entity beliefs and outcomes are weaker relative to incremental beliefs (Vella et al., 2016). This may be because the effects of implicit beliefs are more prominent during times of adversity which may not be as common

within voluntary sport, as compared to other non-voluntary contexts, such as school (Dweck, 1999).

There were also no indirect effects present through mastery-avoidance or performance-approach goals. Although this is consistent with previous research identifying the strongest links between incremental beliefs/mastery-approach goals and entity beliefs/performance-avoidance goals (Stenling et al., 2014; Stevenson & Lochbaum, 2008), the findings raise questions regarding whether the inclusion of all four achievement goals is necessary. Rather, the findings may be lending more support to a dichotomous framework, similar to Dweck and Leggett's (1988) original proposal. More research is needed on the 2x2 achievement goal framework to better understand the role and significance of mastery-avoidance and performance-approach goals in the youth sport context.

The link between change in perceptions of the coach-athlete relationship and enjoyment over the one-year period is in line with previous research highlighting the importance of the coach for enjoyment and continued participation in youth sport (Gardner, Magee, et al., 2016; Gould et al., 2007; Rottensteiner et al., 2015). The finding that the indirect relationship between implicit beliefs and enjoyment via mastery-approach goals was only significant when the perceived coach-athlete relationship deteriorated demonstrates the value of endorsing incremental beliefs and mastery-approach goals. Given most studies exploring the SCMAM are cross-sectional in nature, this finding adds to our current understanding of implicit beliefs and achievement goals, and provides new information about the interactive effect of the social environment over time. The finding suggests that, even when this key relationship is declining, individuals can fall back on their adaptive implicit beliefs and achievement goals to sustain their enjoyment and participation. Research

investigating implicit beliefs in the personality domain found that during times of social adversity, adolescents endorsing incremental beliefs had less negative reactions (e.g., shame, aggression, stress) than those endorsing entity beliefs (Yeager et al., 2014). Although this research was conducted in the school setting with a focus on peer relationships, it is feasible that implicit beliefs set up an interpretive framework that guides responses in a range of areas, including sport. It may not be until the individuals are experiencing difficulties with their social relationships that we are able to see the protective value of their adaptive implicit beliefs and achievement goals.

However, given there were no indirect or conditional indirect effects evident for any of the other models, we cannot overstate these findings and must acknowledge the numerous other variables that can influence levels of youth sport enjoyment and participation over time. For example, some of these may include conflict between other sport or non-sport activities, over-training and burnout, injuries, time and financial costs, parental pressure or over-involvement, an overemphasis on winning, and difficulty accessing facilities (Balish et al., 2014; Crane & Temple, 2015).

6.4.1 Theoretical and Practical Implications

The present research aimed to explore the links between implicit beliefs, achievement goals, and outcomes based on Dweck and Leggett's (1988) original SCMAM, Cury et al.'s (2006) r-SCMAM, and Gardner, Vella et al.'s (2016) subsequent adaptation for understanding youth sport participation and enjoyment. The findings provide support for the notion that adaptive implicit beliefs and achievement goals lead to positive outcomes; however, there was less support for the role of entity beliefs and performance goals. Findings provide some support for the

inclusion of the approach-avoidance distinction, although as previously mentioned, this remains a contentious issue given the continued uncertainty surrounding the role of mastery-avoidance and performance-approach goals. Additionally, given perceived competence was only included as a covariate, its role within the model requires further exploration. For example, future research should investigate whether perceived competence plays a moderating role between achievement goals and outcomes (as proposed in the original SCMAM) or is an independent antecedent on achievement goals (as proposed in the r-SCMAM).

Although the proposed addition of key social figures as moderating factors was partially supported, the nature of these effects was not strong or in the hypothesized direction. Despite this, it is clear that the coach plays a significant role in youth sport enjoyment and participation and should be considered in addition to the cognitive factors in the model. Future research should also explore the role of other key social relationships, including those with parents and peers. One such avenue of investigation may include exploring the role of social goals within the model. Similar to achievement goals which view competence as the primary motive of behaviour, social goals view the desire for social connections as the central motive of behaviour in sport (Allen, 2003). Allen (2005) identified three types of social goals individuals might pursue in sport: affiliation goals (focus on developing reciprocal relationships), recognition goals (focus on gaining recognition from others for effort or ability), and status goals (focus on gaining popularity). Social affiliation goals are considered intrinsic and have been linked with more adaptive outcomes including greater interest and enjoyment in sport (Allen, 2003). In contrast, recognition and status goals rely on extrinsic validation and may produce maladaptive outcomes if validation is not received (Hodge, Allen, & Smellie, 2008).

Understanding the type of social goals individuals are pursuing may therefore help to further explain individuals' response patterns, particularly during times of social adversity.

In a practical sense, the findings highlight the protective value of incremental beliefs and mastery-approach goals and the need to facilitate them among youth sport participants. Researchers should target younger age groups so they are equipped to interpret and respond adaptively as they progress through the adolescent years which are often associated with social difficulties and stress (Fraser-Thomas et al., 2005). Previous research has demonstrated the successful adjustment of adolescent's implicit beliefs about athletic ability (Spray et al., 2006); however, it is unknown how long these manipulation effects can last. Given the primary role of the coach and their frequent interaction with sport participants, it is feasible that regularly promoting incremental beliefs and mastery-approach goals could have lasting effects. Vella, Cliff, Okely, et al. (2014) identified six instructional strategies coaches can use to promote incremental beliefs. These include focusing on effort and persistence (e.g., through rewards and feedback), providing challenge (e.g., through moderately difficult tasks or goal setting), exploring the value of setbacks (e.g., by facilitating reflection and problem solving), promoting self-referenced learning and a mastery climate (e.g., avoiding normative comparisons), providing high performance expectations (e.g., encouraging athletes to improve) and emphasizing the definition of success as giving best efforts. Coach education programs could aid coaches in understanding the need to facilitate adaptive implicit beliefs and achievement goals and provide information on how to implement these strategies.

Parents could also influence the types of implicit beliefs and achievement goals adolescents adopt, particularly given the greater amount of time they spend

with the youth sport participant. It is argued that the way that parents respond to their child's achievement related behaviour (e.g., through praise or criticism) can shape their achievement motivation in a range of contexts (Dweck, 1999). To encourage appropriate and supportive parenting in sport, rules and campaigns such as "Silent Saturdays" and "Play by the Rules" have been introduced (Active Healthy Kids Australia, 2016). However, parents need to be informed about the implications of their behaviours at all times, including those away from the sporting field (Elliott & Drummond, 2017). Parent education programs could teach parents the value of adaptive implicit beliefs and achievement goals for their child's development and provide them with strategies to promote them. For example, post-game debriefs should include recognition of improvements based on their previous skill level, avoiding comparing their performance to others', and encouraging practice for further improvements. Furthermore, parents need to be aware of the way they convey their own achievement motivation to their children, as research has linked youth sport participants' perceptions of their parents' achievement orientations with the development of their own achievement orientations (Weigand, Carr, Petherick, & Taylor, 2001). This is particularly important during late childhood when children begin to differentiate between effort and ability, and are therefore susceptible to developing a maladaptive achievement orientation (Nicholls, 1984).

6.4.2 Strengths and Limitations

Limitations of the study include the low number of individuals who dropped out of sport which led to the use of enjoyment as a proxy measure of dropout. Although enjoyment is considered the most common reason for continued participation and dropout (Crane & Temple, 2015), the results may have been skewed by only including regular sport participants. As is common in youth sport

research, participants tended to report very high levels of enjoyment, incremental beliefs, and mastery-approach goals which may produce ceiling effects (Stenling et al., 2014). The low rate of dropout in the sample may be due to recruiting participants from private high schools. These students are generally from higher socioeconomic positions which is an established predictor of sport participation (Vella, Cliff, & Okely, 2014). Future studies should recruit larger sample sizes from a range of socioeconomic positions to enable the investigation of individuals who have dropped out of sport. Given the effects of implicit beliefs are expected to be most apparent during times of adversity, this may allow us to better explore the role of entity beliefs/performance goals in conjunction with social relationships.

Other limitations include the failure to measure the length of the coach-athlete relationship and track whether the coaches remained the same from Time 1 to Time 2. This may be particularly important as there tends to be a high rate of turnover of youth sport coaches (O'Connor & Bennie, 2006). Future studies should therefore measure and control for these factors. The research also focused on sport participants within a narrow age range where dropout is already an established issue. Research may benefit from focusing on younger participants with the aim of preventing dropout before it occurs. Finally, there were a large number of females as compared to males in the sample. Future research should aim to use larger samples consisting of more even numbers of males and females. This would lead to more generalizable findings and would allow researchers to explore whether the relationships among implicit beliefs, achievement goals, and key social figures vary based on sex.

Strengths of the research include the use of a prospective design which allowed us to explore perceptions of the coach-athlete relationship and enjoyment

over time. The study addressed a need for research to further explore potential moderating variables in the relationship between implicit beliefs and outcomes (Gardner, Vella, et al., 2016; Vella et al., 2016), and was the first to consider the coach in this way. The inclusion of other key social variables (parental and peer relationships) as covariates in all analyses also strengthened the research.

6.4.3 Conclusion

This study revealed that the belief that ability is malleable and can be improved through practice (i.e., incremental beliefs) is related to greater levels of enjoyment, in part due to a focus on achieving self-referenced mastery (i.e., mastery-approach goals). Perceived change in the quality of the coach-athlete relationship was also related to enjoyment over the one-year period. When individuals perceived deterioration in the quality of the coach-athlete relationship, the indirect effect of mastery-approach goals on the relationship between incremental beliefs and enjoyment was stronger. This highlights the protective value of adaptive implicit beliefs and achievement goals in youth sport. These findings could have important implications for sport participants during times of social adversity. Researchers and sport organizations should aim to educate coaches and parents on the significance of incremental beliefs and mastery-approach goals for positive development and provide them with strategies to facilitate these adaptive implicit beliefs and achievement goals in youth sport participants.

Chapter 7: General Discussion & Conclusions

7.1 Summary

This thesis explored the factors underlying continued participation and dropout in youth sport. The first aim of the thesis was to propose a conceptual model that could be applied to the youth sport context to understand participation/dropout behaviour. This aim was addressed in Chapter 2 which laid the theoretical foundations for the research program. This chapter reviewed the literature surrounding participation and dropout in youth sport, and argued that the SCMAM (Dweck & Leggett, 1988) – taking into account Cury et al.'s (2006) revisions of the SCMAM – provided an ideal model to investigate the cognitive factors underlying youth sport dropout. Chapter 2 also proposed that key social figures in youth sport (parents, coaches, and peers) should be incorporated into the SCMAM to better understand youth sport participation and dropout. In particular, this chapter proposed that perceptions of social relationships with key social figures would moderate the effect of implicit beliefs and achievement goals on outcomes including dropout.

Chapter 3 aimed to examine whether enjoyment and behavioural intentions were valid indicators of participation and dropout behaviour in youth sport. Survey data was collected from high school students at two time points over a one-year period. Of the 327 regular sport participants at baseline, 247 (75.5%) continued participating in their main sport, 26 (8%) dropped out, and 54 (16.5%) could not be matched due to study attrition. A hierarchical logistic regression model estimated the probability of dropout using enjoyment, behavioural intentions, age, sex, competition level, perceived competence, parental support, coach-athlete relationship quality, friendship quality, and peer acceptance as predictor variables. Enjoyment and intention to continue in sport were inversely associated with dropout. Peer

acceptance was the only covariate to be significantly associated with dropout in the final model. This study was the first to link levels of enjoyment with dropout behaviour using a prospective design following individuals across clubs and sports. The findings represent an important contribution to the literature, and support for use of enjoyment and behavioural intentions as indicators of sport participation/dropout behaviour in the literature and Chapters 4 and 5 of the research program.

The cognitive and social components of the model proposed in Chapter 2 were then examined in relation to enjoyment/behavioural intentions in Chapters 4 and 5 using a cross-sectional survey design. Using multiple mediation path models, Chapter 4 explored the links between implicit beliefs, the 2x2 achievement goals, and enjoyment/behavioural intention among 327 regular sport participants. Results indicated that implicit beliefs were indirectly linked with enjoyment/intention to continue through achievement goals. Specifically, individuals high in incremental beliefs reported greater enjoyment and intention to continue, perhaps due to endorsing mastery-approach goals. Individuals relatively high in entity beliefs reported less enjoyment, perhaps due to endorsing performance-avoidance goals. These individuals also reported less intention to continue, regardless of their achievement goals. Findings provided new support for the links between the cognitive components of the proposed motivational model in a sport context, namely that incremental beliefs are related to achievement goals, which in turn are related to outcomes in youth sport.

Chapter 5 aimed to understand differences in the social climate in youth sport based on perceptions of relationships with parents, coaches, and peers. A latent profile analysis using the same participants from Chapter 4 (n = 313 following the removal of outliers) revealed four distinct social climate profiles: positive social

climate (45.1%); diminished social climate (19.8%); positive coach relationship quality (19.8%); and positive friendship quality (15.3%). The greatest levels of enjoyment and intention to continue were reported by individuals within the positive social climate and the positive coach relationship profiles, as compared to the diminished social climate and positive friendship quality profiles. Additional mediation analyses revealed that the social climate profiles were linked with intention to continue indirectly through enjoyment. This study was the first to utilise a person-centred approach to explore the perceived social climate in youth sport. Results provided evidence for the key role of social figures and suggested the coach may be particularly important for youth sport participation and dropout.

Chapter 6 aimed to test the overall theoretical model and explore the interactive effects of the cognitive and social components over time. Given the small number of individuals who dropped out and the established links between enjoyment and participation/dropout behaviour outlined in Chapter 3, enjoyment was again used as a proxy measure. Similarly, given the evidence for the importance of the coach in Chapter 5, the coach-athlete relationship was used as the key social component within the model. The study therefore aimed to explore whether implicit beliefs and achievement goals were related to enjoyment over a one-year period, and whether perceived changes in the coach-athlete relationship moderated these relationships. Indirect and conditional indirect effect analyses were conducted using the remaining 247 regular sport participants. After adjusting for enjoyment at Time 1, incremental beliefs were indirectly related to Time 2 enjoyment via mastery-approach goals. However, this effect was only evident when the quality of the coach-athlete relationship was perceived to have deteriorated. Although the effect of the coach was not in the expected direction, findings demonstrated the protective value of adaptive

implicit beliefs and achievement goals in youth sport. Moreover, these novel results highlighted the value of investigating both social and cognitive factors together, supporting the proposed inclusion of social factors within the SCMAM in Chapter 2.

7.2 Theoretical and Practical Contributions

Theoretical Contribution by Chapter. The findings from this thesis make a number of important theoretical contributions to the literature and raise some additional questions. Firstly, Chapter 3 demonstrated that enjoyment and behavioural intentions to continue can be used as proxy measures of participation/dropout. This is important given the time and cost associated with longitudinal research, and allows researchers to investigate participation/dropout in samples where follow-up may not be feasible. The findings from Chapters 4 and 6 were consistent with research in other domains (e.g., schooling and physical activity; Biddle, Wang, Chatzisarantis, et al., 2003; Cury et al., 2006; Dweck & Leggett, 1988; Yngvar Ommundsen, 2001), providing support for the predictive utility of the SCMAM within a range of achievement contexts. Specifically, the current findings demonstrated that implicit beliefs and achievement goals are related to sport participation behaviour. The findings also provided some evidence for the inclusion of the 2x2 achievement goal framework to explore sport participation as mastery-approach goals were consistently linked with the most positive outcomes. This supports the modifications made to the SCMAM by Cury et al. (2006) within a sport context and the combined use of measures of implicit beliefs and achievement goals in youth sport. This is significant as some research in alternate domains (e.g., schooling and physical education) has focused on implicit beliefs alone and dropped the use of achievement goals to predict behavioural outcomes (Mouratidis, 2017; Ommundsen, 2003). The results of this thesis suggest that the practice of using implicit beliefs alone to predict

behaviour is incomplete because pathway of influence (through achievement goals) is of particular importance. Therefore, research should retain the use of achievement goals when investigating the motives underlying behaviour in achievement contexts.

Chapter 5 demonstrated that social factors are also related to sport participation, and that the relationship between various social factors may be cumulative and/or interdependent. The findings highlighted the value of utilising a person-centred approach to explore the social climate, as this provided a more comprehensive and integrated way of capturing the different social environments in youth sport than investigating individual agents. This allowed a more nuanced insight into the relationships between the social environment and youth sport participation. However, there remains some uncertainty as to the relative importance of each social agent. For example, Chapter 5 highlighted the key role of the coach-athlete relationship which is consistent with a wide range of research in organised youth sport (Gould, 2007; Rottensteiner et al., 2015; Vella et al., 2013). In contrast, Chapter 2 suggested that peer acceptance is also of particular significance in predicting enjoyment and dropout behaviour. As such, the relative importance of the various social agents at play in organised youth sport is currently unclear. It may be that, despite general discernible trends (Chan et al., 2012), the influence of social agents is highly individualised, interdependent, and/or cumulative. This is consistent with the theoretical assumptions of Bandura (1986) concerning the reciprocal determinism between behaviour, person, and environment (discussed in more detail below). Chapter 6 demonstrated the interactive effect of cognitive and social components and further supports Bandura's (1986) assumption of reciprocal determinism between the person (including cognitive variables), the environment (including social agents), and behaviour (such as dropout from sport). The Chapter

provides initial support for the inclusion of social agents as proxy measures of environmental variables into a revised SCMAM; and provides some support for further investigations into the interdependency or reciprocal causation between social, cognitive, and behavioural variables in the sport context.

Global Theoretical Contribution. Overall, one of the most important contributions of this thesis is the addition of social variables to the SCMAM. Although the hypothesised effects of implicit beliefs and achievement goals on motivational outcomes within the original SCMAM and r-SCMAM gained some support, the interaction between cognitive and social components suggests that the models articulated by Dweck and Leggett (1988) and Cury et al. (2006) are incomplete according to one of the basic tenets of social cognitive theory (Bandura, 1986). By reducing the number and scope of predictor variables to include solely cognitive constructs, the SCMAM put forward by Dweck and Leggett (1988) and Cury et al. (2006) removes some important elements of social cognitive theory. Specifically, the SCMAM in its current form excludes the influence of environmental variables on behaviour in favour of a narrow range of cognitive variables. The current SCMAM also excludes any element of reciprocity in the relationships between environment, person, and behaviour, in favour of prescribed unidimensional causal pathways. Therefore, this thesis has provided initial support for the inclusion of social agents as proxy measures of environmental variables into a revised SCMAM.

By exploring the role of parents, coaches, and peers, and integrating social factors within the SCMAM, this thesis has hypothesised that there is a protective function that is played by adaptive implicit beliefs/achievement goals. While it is unclear from early seminal work (Diener & Dweck, 1978, 1980; Dweck, 1986;

Dweck, Davidson, Nelson, & Enna, 1978; Dweck & Elliot, 1983) whether protective functions were intended to form part of the original model, the assumption that adaptive beliefs can play a protective role in times of difficulty is implicit in the methodology of more recent work. For example, implicit beliefs have been extensively studied over the transition to high school period on the assumption that motivational and behavioural outcomes can be differentiated by one's dominant implicit belief over this period (Blackwell et al., 2007; Romero, Master, Paunesku, Dweck, & Gross, 2014; Yeager et al., 2014). This thesis provides some empirical support that incremental beliefs and mastery-approach goals can protect young people against negative outcomes within the youth sport context when detriments to the environment are perceived.

Additionally, the findings of this thesis lend credence to other theoretical models in the youth sport domain that consider the environment, person, and behaviour. For example, Fraser-Thomas et al.'s (2005) applied sport-programming model of positive youth development integrates the National Research Council and Institute of Medicine's (2002) features of settings that promote positive youth development, Côté et al.'s (2003) Developmental Model of Sport Participation, and Benson's (1997) Developmental Assets, to create an integrated model to promote positive youth development. Together, this framework incorporates environmental factors (e.g., the role of policy makers, sports organisations, coaches, and parents) and individual factors (e.g., stage of physical, psychological, social, and intellectual development) which can lead to positive youth development and continued involvement in sport. Similarly, Henriksen et al.'s (2010) holistic ecological models consider the individual athlete and their interaction with environmental factors at the

micro- (e.g., coaches, family, peers) and macro-level (e.g., sports federation, media, culture) which influence talent development.

Practical Contribution. A practical implication of this thesis includes the need for practitioners to be cognizant of the interdependency of the individual and the environment when working to facilitate enjoyment or prevent dropout in youth sport. Therefore, focus should not be limited to the sport participant and consideration should be given to how social agents might also influence motivation and behaviour. For example, there is some evidence to suggest that social agents can shape implicit beliefs (Slater et al., 2012). Vella, Cliff, Okely, et al. (2014) identified six strategies coaches can use to promote incremental beliefs including focusing on effort and persistence, providing challenge, exploring the value of failure, promoting learning, having high performance expectations, and defining success as effort. Coach education programs could be introduced to teach coaches the value of incremental beliefs and mastery-approach goals, and provide information on how to incorporate these strategies into their training programs. Additionally, findings provided further support for the importance of positive relationships with key social agents, and in particular, high quality relationships with coaches and the peer group (Gould, 2007; Rottensteiner et al., 2015; Scanlan, Carpenter, Lobel, et al., 1993; Smith et al., 2006; Visek et al., 2015). As highlighted by Keegan et al. (2010), consideration of the motivationally relevant behaviours of key social figures by researchers and practitioners could aid the development of training environments that facilitate enjoyment and sustained participation.

7.3 Strengths, Limitations, and Future Research

This program of research aimed to investigate the utility of an integrated motivational model to explain participation and dropout behaviour in youth sport.

Although the results provided support for the adaptive function of incremental beliefs, there was little evidence surrounding entity beliefs. Previous youth sport research has similarly found individuals tend to endorse entity beliefs less than incremental beliefs, along with weaker associations between entity beliefs and outcomes compared to incremental beliefs (Stenling et al., 2014; Vella et al., 2016). This may reflect an issue with the measurement of implicit beliefs in sport, which differs from that in other domains. For example, within sport, incremental and entity beliefs are measured independently using separate subscales; however, in other domains (e.g., personality, intelligence, emotional functioning) incremental and entity beliefs are measured using a single, dichotomous scale with incremental and entity beliefs at opposite ends (Vella et al., 2016). Future sport research may therefore benefit from using measurement tools consistent with that in other domains.

The research program also provided support for the inclusion of social figures within the social-cognitive model of achievement motivation; however, the findings were not in the expected direction and thus their role in the model requires further investigation. For example, Slater et al. (2012) found social agents shaped golfers' implicit beliefs, and thus the social component may be better considered as an antecedent of implicit beliefs in the model. In line with Bandura's (1986) social cognitive theory, perhaps there is a reciprocal relationship between cognitive and social factors which should be reflected as a bidirectional relationship in the model. Additionally, other measures of social relationships that are more closely aligned with the social-cognitive or achievement goal frameworks may be more suitable for inclusion within the model. For example, these may include social goals (Allen, 2003) or the parent-, coach-, and peer-created motivational climate (Keegan et al.,

2009). However, as noted by Keegan et al. (2010), the role of social factors in youth sport is complex and reliance on a single theory/framework may limit understanding. Therefore, future research could also benefit from considering how social factors are examined in other models. For example, Henriksen's (2010) holistic ecological approach to talent development incorporates social factors in both the athletic and non-athletic domain, which may similarly have implications for dropout.

Other limitations of the research program include the failure to test and identify the role of perceived competence in the model, along with the low number of individuals who dropped out of sport in the final sample. Given the prominent and varying role of perceived competence in both Dweck and Leggett's (1988) original model and Cury et al.'s (2006) revised model, future research should aim to explore and clarify its position in the overall model.

There were also a number of important methodological strengths and limitations. Strengths include the collection of data through high schools which allowed me to follow individuals who dropped out of their sport. In doing so, I overcame an issue that has plagued dropout research as traditionally, data has been collected through sports teams, meaning individuals who dropped out could not be followed up, or retrospective methods had to be used. This method also provided a greater amount of variation around factors such as coach and peer relationships. When collecting data through sports teams, many participants share the same coach and peers. By collecting data through high schools, researchers have access to participants from a range of sports and teams, gaining a much broader variation in coaches and peers, and increasing the generalisability of findings. Other strengths include the use of both data-driven and person-centred approaches, and the assessment of relationships between factors over time. However, it is important to

note that the research was limited as it drew from only two sources at two time points. Although sophisticated modelling techniques were used to explore the different components of the SCMAM, the production of four research papers from two sets of data was a weakness of the thesis. Moreover, the two sources were private high schools in the same metropolitan region. Therefore, participants were typically from higher socioeconomic positions, further limiting the generalisability of findings. Future studies should aim to include larger sample sizes from a wider demographic, with testing at a greater number of time points to gain a better understanding of the rate of dropout and the influencing factors over time. This would allow the model to be tested directly in relation to dropout, rather than using proxy measures. The sample should also include participants from a larger age range (e.g., 11-18 years) as participation rates continue to decline throughout this period and the reasons for dropping out may vary. Finally, to address potential self-report biases, future research could include measures of social relationships from parent, coach, and peer perspectives. This would allow the exploration of differences between the actual and perceived social climate.

7.4 Conclusions

This thesis explored youth sport participation and dropout using an integrated motivational model. The prospective research design addressed a methodological gap in the literature by establishing enjoyment and behavioural intentions as predictors of dropout behaviour. Cross-sectional findings demonstrated the adaptive role of incremental beliefs and mastery-approach goals in the youth sport context. Perceptions of relationships with key social figures also emerged as important factors associated with youth sport participation/dropout. Overall, findings demonstrated the protective value of adaptive implicit beliefs and achievement goals in youth sport.

Moreover, the findings of this thesis suggest that cognitive factors alone provide only a partial explanation of behaviour in the youth sport context and there is value in including social factors within the social-cognitive model of achievement motivation.

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Appendix A: Thesis Format Agreement

UNIVERSITY
OF WOLLONGONG
AUSTRALIA

Thesis Format Agreement

I agree that the thesis submitted by the Ph.D candidate, Lauren Gardner, has been prepared in journal article compilation style format.

Principle supervisor:

A/Prof. Christopher Magee

University of Wollongong

Ph.D candidate:

Lauren Gardner

University of Wollongong

Appendix B: Statement of Contribution of Others

UNIVERSITY OF WOLLONGONG AUSTRALIA

Statement of Contribution of Others

As co-authors on the following papers:

1. Gardner, L. A., Vella, S. A., & Magee, C. A. (2016). A motivational model to understand youth sport dropout and enjoyment. *International Journal of Sport Psychology, 47*, 203-223.
2. Gardner, L. A., Magee, C. A., & Vella, S. A. (in press). Enjoyment and behavioral intention predict organized youth sport participation and dropout. *Journal of Physical Activity and Health.*
3. Gardner, L. A., Vella, S. A., & Magee, C. A. (2017). Continued participation in youth sports: The role of achievement motivation. *Journal of Applied Sport Psychology, 29,* 17-31.
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I declare that the greater part of the work is directly attributable to the Ph.D candidate, Lauren Gardner. I confirm that Lauren Gardner has made the following contributions:

- Design of the research
- Data collection
- Data analysis
- Drafting the initial manuscript
- Revision of the manuscript

As supervisor, I have been involved in formulation of research ideas and editing manuscripts.

Principle Supervisor: A/Prof. Christopher Magee

Co- supervisor: Dr Stewart Vella

PhD Candidate: Lauren Gardner

Appendix C: Study Measures

Implicit Beliefs - Conceptions of the Nature of Athletic Ability Questionnaire-Version 2 (CNAAQ-2)

Please circle the <u>one</u> number that best indicates how much you agree or disagree with the following statements:

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1.	You have a certain level of ability in sport and you cannot really do much to change that level	1	2	3	4	5
2.	To be successful in sport you need to learn techniques and skills, and practise them regularly	1	2	3	4	5
3.	Even if you try, the level you reach in sport will change very little	1	2	3	4	5
4.	You need to have certain 'gifts' to be good at sport	1	2	3	4	5
5.	You need to learn and to work hard to be good at sport	1	2	3	4	5
6.	In sport, if you work hard at it, you will always get better	1	2	3	4	5
7.	To be good at sport, you need to be born with the basic qualities which allow you success	1	2	3	4	5
8.	To reach a high level of performance in sport, you must go through periods of learning and training	1	2	3	4	5
9.	How good you are at sport will always improve if you work at it	1	2	3	4	5
10.	It is difficult to change how good you are at sport	1	2	3	4	5
11.	To be good at sport you need to be naturally gifted	1	2	3	4	5
12.	If you put enough effort into it, you will always get better at sport	1	2	3	4	5

Achievement Goals – Achievement Goals Questionnaire for Sport (AGQ-S)

Please circle the <u>one number</u> that best indicates how you feel with respect to your main sport:

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1.	It is important to me to perform as well as I possibly can.	1	2	3	4	5
2.	I worry that I may not perform as well as I possibly can.	1	2	3	4	5
3.	It is important to me to do well compared to others.	1	2	3	4	5
4.	I just want to avoid performing worse than others.	1	2	3	4	5
5.	I want to perform as well as it is possible for me to perform.	1	2	3	4	5
6.	Sometimes I'm afraid that I may not perform as well as I'd like.	1	2	3	4	5
7.	It is important for me to perform better than others.	1	2	3	4	5
8.	My goal is to avoid performing worse than everyone else.	1	2	3	4	5
9.	It is important for me to master all aspects of my performance.	1	2	3	4	5
10.	I'm often concerned that I may not perform as well as I can perform.	1	2	3	4	5
11.	My goal is to do better than most other performers.	1	2	3	4	5
12.	It is important for me to avoid being one of the worst performers in the group	1	2	3	4	5

Perceived Competence – Competence Subscale from the Self-Perception Profile for Children

For each of the following questions, please read BOTH statements and decide which ONE is most like you (left or right).
Put an X in the box next to the statement to indicate if it is "Really True for Me" or "Sort of True for Me":

	Really True for Me	Sort of True for Me	**Sample Item…**			Sort of True for Me	Really True for Me
SAMPLE	☐	☒	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.	☐	☐

Continue…

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
1	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐
2	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐
3	☐	☐	Some kids think they could do well at just about any new sports activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐
4	☐	☐	Some kids feel that they are better than others their age at sports	**BUT**	Other kids don't feel they can play as well	☐	☐
5	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than just watch	☐	☐
6	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐

Parental Support – Perceived Parental Support Scale (PPSC)

Please circle the <u>one number</u> that best indicates how you feel with respect to your main sport:

		Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
1.	My parents are proud of me because I play for my club	1	2	3	4	5
2.	If I have a problem, my parents will help me	1	2	3	4	5
3.	I get on well with my parents	1	2	3	4	5
4.	My parents support me in what I do	1	2	3	4	5

Quality of the Coach-Athlete Relationship – Coach-Athlete Relationship Questionnaire (CART-Q)

Please circle the <u>one number</u> that best indicates how you feel about your coach from your main sport:

		Strongly Disagree			Neutral			Strongly Agree
1.	I feel close to my coach	1	2	3	4	5	6	7
2.	I like my coach	1	2	3	4	5	6	7
3.	When I am coached by my coach, I feel at ease	1	2	3	4	5	6	7
4.	I feel committed to my coach	1	2	3	4	5	6	7
5.	I trust my coach	1	2	3	4	5	6	7
6.	When I am coached by my coach, I feel responsive to his/her efforts	1	2	3	4	5	6	7
7.	I feel that my sport career is promising with my coach	1	2	3	4	5	6	7
8.	I respect my coach	1	2	3	4	5	6	7
9.	When I am coached by my coach, I am ready to do my best	1	2	3	4	5	6	7
10	I feel appreciation for the sacrifices that my coach has experienced in order to improve his/her	1	2	3	4	5	6	7
11	When I am coached by my coach, I adopt a friendly stance	1	2	3	4	5	6	7

Friendship Quality – Sport Friendship Quality Scale (SFQS)

Think about your CLOSEST FRIEND in your main team/sport. Please circle the <u>one number</u> that best indicates how you feel:

		Not at all true	A little true	Somewhat True	Pretty true	Really true
1.	My friend gives me a second chance to perform a skill	1	2	3	4	5
2.	My friend and I can talk about anything	1	2	3	4	5
3.	My friend and I have common interests	1	2	3	4	5
4.	My friend and I do fun things	1	2	3	4	5
5.	My friend and I make up easily when we have a fight	1	2	3	4	5
6.	My friend and I get mad at each other	1	2	3	4	5
7.	My friend and I praise each other for doing sports well	1	2	3	4	5
8.	My friend and I stick up for each other in sports	1	2	3	4	5
9.	My friend and I do similar things	1	2	3	4	5
10.	I like to play with my friend	1	2	3	4	5
11.	My friend and I try to work things out when we disagree	1	2	3	4	5
12.	My friend and I fight	1	2	3	4	5
13.	After I make mistakes, my friend encourages me	1	2	3	4	5
14.	My friend looks out for me	1	2	3	4	5
15.	My friend and I have the same values	1	2	3	4	5
16.	My friend and I spend time together	1	2	3	4	5
17.	When we have an argument, my friend and I talk about how to reach a solution	1	2	3	4	5
18.	My friend has confidence in me during sports	1	2	3	4	5
19.	My friend and I have arguments	1	2	3	4	5
20.	My friend and I tell each other secrets	1	2	3	4	5
21.	My friend and I think the same way	1	2	3	4	5
22.	My friend and I play well together	1	2	3	4	5

Peer Acceptance – Social Subscale from the Self-Perception Profile for Children

For each of the following questions, please read BOTH statements and decide which ONE is most like you (left or right). Put an X in the box next to the statement to indicate if it is "Really True for Me" or "Sort of True for Me":

	Really True for Me	Sort of True for Me	**Sample Item…**			Sort of True for Me	Really True for Me
SAMPLE	☐	☒	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.	☐	☐

Continue…

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
1	☐	☐	Some kids find it hard to make friends in their team/sport	**BUT**	Other kids find it pretty easy to make friends in their team/sport	☐	☐
2	☐	☐	Some kids have a lot of friends in their team/sport	**BUT**	Other kids don't have very many friends in their team/sport	☐	☐
3	☐	☐	Some kids would like to have a lot more friends in their team/sport	**BUT**	Other kids have as many friends as they want in their team/sport	☐	☐
4	☐	☐	Some kids are always doing things with a lot of kids in their team/sport	**BUT**	Other kids usually do things by themselves in sport	☐	☐
5	☐	☐	Some kids wish that more people in their team/sport liked them	**BUT**	Other kids feel that most people their team/sport do like them	☐	☐
6	☐	☐	Some kids are popular with others in their team/sport	**BUT**	Other kids are not very popular in their team/sport	☐	☐

Enjoyment – Enjoyment Subscale from the Sport Commitment Model (SCM)

Please circle the <u>one number</u> that best indicates how you feel with respect to your main sport:

		Not at all	A Little	Somewhat	Pretty Much	Very Much
1.	Do you enjoy playing your main sport?	1	2	3	4	5
2.	Are you happy playing your main sport?	1	2	3	4	5
3.	Do you have fun playing your main sport?	1	2	3	4	5
4.	Do you like playing your main sport?	1	2	3	4	5